

TANDY LAPTOP COMPUTING

OCTOBER 1991 -VOL. 8, NO. 7

TERRY KEPNER'S

portable 100

\$3.95/CAN \$4.95

A MONTHLY PUBLICATION (EXCEPT COMBINED JULY/AUGUST ISSUE)

Calibrate Your Tach in Mid-air!

**WP-2—"Big Iron"
Connectivity**

**New DeskMate—
Version 3.05**

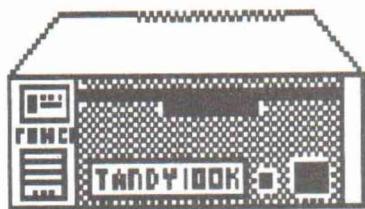
**No-battery Pocket
Modem Reviewed**

**Let Your PC Read &
Write Model T and
WP-2 Disk Files**

**New Super ROM
column**

Laptop and Palmtop Computer Specials

TANDY 100/102/KC-85 OWNERS: **TANDY 100K PORTABLE 3.5" DISK DRIVE SPECIAL** (Reconditioned units only)
Units come complete with manual, cable, Tandy utility disk and are fully guaranteed by Ultrasoft Innovations for 90 days.



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Package#2: WP-2 + WPDUET (MAC) Bundle \$ 419.95 (Reg. \$ 450.00)

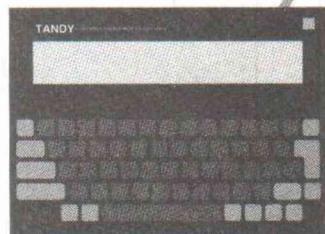
Package#3: WP-2 + WP2DOS (IBM) Bundle \$ 399.95 (Reg. \$ 430.00)

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Note: Ultrasoft will accept trade-ins of used Tandy 100/102/200/DVI and accessories (in any condition) against the purchase of an Atari Portfolio or Tandy WP-2 and related accessories.

The UltraCard Special for the Tandy 100/102

The UltraCard is a Memory Expansion System for the 100/102, using credit-card sized RAM Cards. The unit is external, weighs only 8 ounces and has dimensions of 6.25"x4.5"x0.5" (WxLxH). RAM Cards will store both RAM-based (.BA, .DO, .CO) and ROM-based (SuperRom, URII, etc.) files. Two card slots are available, for a total of 512K memory expansion.

UltraCard Interface 100 or 102 + 128K RAM Memory Card = \$349.90

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Please note that you can upgrade at any time from one card size to the next simply by returning your old card and paying the difference in price between one card size and the next.

The UltraCard for the Model 100 and Tandy 102 is in production now. We are accepting orders on a first come - first serve basis. To begin with, quantities of the UltraCard will be limited. The first orders will only begin to be shipped by the end of June, 1991. The next deliveries will be 4-6 weeks later. Call for details.

Please contact Ultrasoft for a complete 100/102/200/WP-2/Portfolio product listing.



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More Than Just a Laptop User Group

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T-WORD: overwrite/insert mode

while editing, embed print controls, control print output (margins, line spacing, page feeds, headers, footers, auto page numbering, bold face, underline, italics, mail merge, labels, and more), pixel-plot view of document before printing. **T-BASE:** true relational base operations, key field sorts, math, report generation, etc. **IDEA!**: outliner program for concept development. **VIEW 80:** see up to 60 characters per line while in TEXT, TELCOM and BASIC, fast processing, easy to read. **TS-DOS LINK:** automatically loads and runs TS-DOS from disk without conflicts (TS-DOS on disk, sold separately).



TS-DOS on Disk

Super fast, easy access to your TPDD or TPDD2. Available for Models 100/102/200 and NEC8201. Features: file tagging, file printing direct from disk or RAM, direct access to disk drive from within BASIC or TEXT. Use by itself or with the Ultimate ROM II or other ROMs.



TS-DOS on ROM

When all you need is disk access without using RAM. Superfast, easy access to your TPDD or TPDD2. Available for Models 100/102/200 and NEC8201. Features: file tagging, file printing direct from disk or RAM, direct access to disk drive from within BASIC or TEXT. ROM version includes file compression in RAM. Program runs from ROM - uses no RAM!

ROM2/Cleuseau

The very best programming tools available for Model 100/102/200 and NEC8201 laptop programmers. Two ROMs in one, and more. ROM2 is a full functioned 8085 macro assembler. Cleuseau adds much needed features to BASIC and TEXT. Call for full details.



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Good-looking, powerful, long-lasting battery pack encased within an attractive black-vinyl holder provides hundreds of hours of battery life. Attaches to the back/bottom of your laptop with velcro (included). Hand crafted and tested. (Requires 4 "D" cell batteries, not included).



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Turn your Model 100/102/200/NEC8201 into a PC-partner. Connect your laptop computer or Tandy Portable Disk Drive directly to MS-DOS computers for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Feature rich! (Computer <-> Link Cable required)

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Turn your WP2 into a PC-partner. The only "file transfer" and "file conversion" software available or WP2 to DOS computer owners. Online utilities convert WP2.D0 files to popular DOS word processing file formats ... maintains file formatting codes. Super easy and fast. (Computer->->Link Cable required)



Computer Link <-> Cables

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100duet

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Loader

Add-on connection program enables Model 200 and NEC8201 owners to use 100duet.

WP2duet

Turn your WP2 into a Mac-partner. Connect your laptop computer or Tandy Portable Disk Drive directly to Macintosh computers for file transfers at 19200 baud. Fast! Easy to use. Single or batch file transfers at the press of a button. Automatic file translations allow your Mac programs to use your laptop files, directly! Maintains file formatting codes.

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Keyboard Bands

Just the right size dental rubber bands necessary to almost eliminate Model 100/102/200 keyboard noise. Great for library and meeting use. Easy to install. Instructions included.

Quick Reference Card

Don't leave home without this handy three-fold card, containing all the functions for Model 100/102 use. Includes a listing of BASIC, TEXT commands and TELCOM settings.

KONEXX

The hottest, new line-attachment for going online through office PBX and hotel phones. Does not require a dedicated line. Active electronics provide much more than simple switching. Attaches, in-line, between the phone handset and the base. Includes clips for hard-wired base-to-handset found in most hotels. Small size - fits in pocket.



RAM Expansion

Expand your Model 100/102/200/WP2 computer's RAM. RAM chips, RAM expansion modules and WP2 RAM disks available. (M100: 8K RAM chips, 64K and 96K RAM Exp Banks) - (M102: 8K RAM, 128K and 256K RAM Exp Banks) - (M200: 24K RAM banks) - (WP2: 128K RAM disk)

Free BBS

Our free-2-use bulletin board computer is available 24 hours a day. Features: free public conference, free classified advertising, free laptop reference material, free newsletter, free downloads, product ordering, assistance, and more. Log on with any computer. Simple menus fit all 40 character, 8 line displays. Fast, interrupt drive, easy to use for beginners. Friendly. No online cost. Unlimited online time. PC Pursuable! Optional online library access \$1 a month.

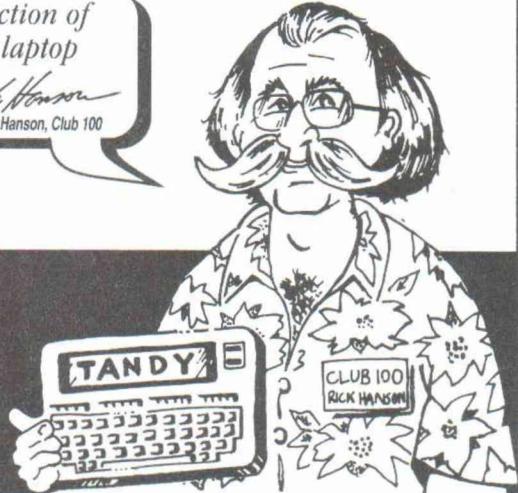


Program Collections

We have the largest "quality" collection of public domain, shareware and author-specific programs available for Model 100/102/200 users, i.e., text, print, telcom, business, graphics, drives, utilities, games, music, programming, education. Available online or mail order on disk. Listings available.

"Look to Club 100 for the largest selection of performance products to make you a laptop power user. Call today!"

Rick Hanson
Rick Hanson, Club 100

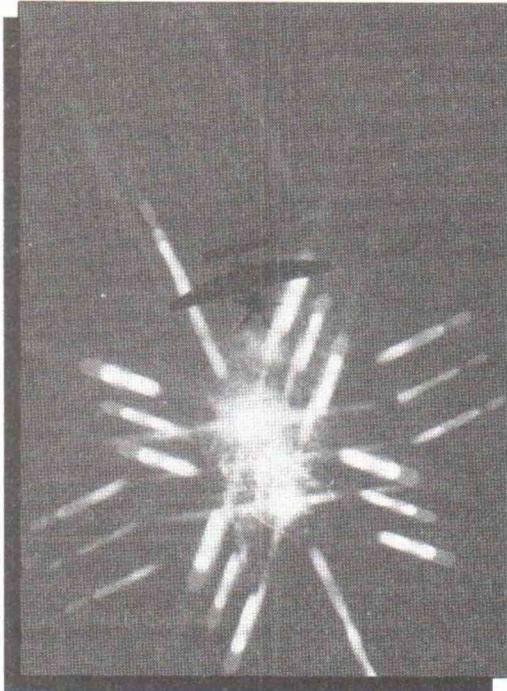


Circle 160 on reader service card.

ON
THE
COVER:

Keeping your plane safe is always a good idea. Sean Dwyer gives us a BASIC program that helps reach that goal.

Infrared photo by Bob Liddil.



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I/O

THE IDEA BOX

NEW PRODUCTS

DEFUSR

PORTABLE 100 CLASSIFIEDS

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The difference between Model T and MS-DOS users!

Programs, updates, Super ROM compatibility, and more.

A little magic with your Model T.

Lots of new stuff and upgraded software.

Safaris, Zen, and packet radio.

Software, hardware, wanted.

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ROM WITH A VIEW

I've noticed a basic difference between the Model T and MS-DOS crowds. Model T users tell us how they use their machines, how they want to use 'em, what they've made 'em do, what they like—and don't—in *Portable 100*. Ideas, suggestions, wishes, gripes, groans, and kudos. They tell us what they need.

MS-DOS users, near as I can tell, aren't even breathing! Despite your increasing numbers, precious few seem inclined to write or call. Compared to the Model T "Mail Flood" your missives are a mere trickle. Why?

You don't complain. Are we doing everything exactly right? Not likely. So we'd expect to hear about that, too, but we don't. You're not overjoyed? Not terribly unhappy? You don't have wishes, ideas, complaints ... not even opinions? Naw, can't be! Maybe it's just easier writing letters to the editor in *TEXT* than in *WordPerfect*. (No funky fonts, hassling with printer drivers, etc.)

Maybe the Model T feels more personal, its owners more like family whose mutual interests make them eager to participate. But with MS-DOS so prevalent—yet another "revolutionary breakthrough" announced weekly, it seems—maybe DOS owners don't feel that personal attachment. As Model T owners search and scramble for "just right" programs and gadgets, the DOS world is constantly flooded with newer and slicker "goodies" to an almost overwhelming degree. No need to participate, just sit and wait, right?

I hope not. As a laptop user, I'm sure you want problems solved, mysteries explained, questions answered, and ideas shared. Opinions? Surely you have opinions! Let's hear 'em! Gripe. Complain. Beg and wheedle (I rarely get to use that word)! Pat us on the back. Shoot us in the back. Tell me you're alive and breathing and, most importantly, thinking.

Just in case *WordPerfect* really is too hard to use, check out *Telecommuter* (p. 20). It makes a DOS box work as simply as a Model T, as well as with a Model T, but with all the power of a PC. Like a Model T on steroids!

More on MS-DOS: MOVING UP columnist Tony Anderson took time off this month to deal with more important matters. Pinch-hitting for Tony is our own Linda "Barnacle" Tiernan, recently MOVING UP-ing from her faithful Starlet laptop. (See p. 17.)

And more: The 1500 HD isn't in the 1992 Radio Shack catalog! In its place is the 1800 HD (\$1,995.00). While similar to the 1500 (weight, size, appearance, 20MB hard drive, 1.44MB floppy), it has a 12MHz 80286 CPU, VGA triple supertwist display, plus an external disk drive port. Memory is expandable (says the Computer Reference Guide) to 3MB. Comes with MS-DOS 5.0, *DeskMate* (natch!), and a 3.5-hour battery life. I've gotta check this one out.

Model T stuff: The 102 is in the '92 catalog, so we can continue to ignore any rumors of its demise. Also, I just received the user manual for Ultrasoft's *Ultracard* memory expansion. (Finally!) We expect a review unit soon, so stay tuned!

Before I split, I must mention that Cynthia Murphy's cover and inside photos of Alhambra High students last month (Sept. '91) were quite good. Unfortunately, technical problems on our end caused her fine photos to be poorly rendered. Sorry, Cynthia!

Okay, now I'll split. Meantime, if you DOS'ers can't get *WordPerfect* happening, just hand-write your letters. (I promise we won't tell the Model T types!)

Nugent

Toolbox

Manuscripts were typed into Microsoft Word 4.0 on a Tandy 1500 HD, where they were edited, spell-checked, and had basic format instructions inserted. From there they were loaded into a Tandy 4000 (80386 CPU, Tandy EGA Monitor, Tandy LP-1000 LaserPrinter) desktop computer and placed into Aldus' IBM PageMaker 3.01. Once there, design decisions on photo, figure, and listing sizes and placements were made. Here, pull quotes are placed, headlines, intros, and bylines are sized and positioned, and advertisements positioned.

Normally, the Tandy LP-1000 is capable of emulating only a Hewlett Packard Laser Printer Plus, but with the

addition of the Destiny Technology Corporation (300 Montague Expressway, Suite 150, Milpitas, CA 95035. (408) 262-9400) PageStyler 4.5MB kit, the LP-1000 is turned into a fully-compatible PostScript printer, with all 35 native fonts that are found in the Apple LaserWriter Plus printer. The Destiny PageStyler is available through the Tandy Express Order Hardware system.

Page previews were output from the Laserprinter. When everyone was satisfied with the appearance, final pages were output and artwork and line art ads were positioned. The finished magazine was then delivered to the printer, who printed it, labeled it, and mailed it to you.

TERRY KEPNER'S portable 100

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POSTMASTER: Send address changes to: Portable 100, Portable Computing International Corporation, 145 Grove Street Ext., PO Box 428, Peterborough, NH 03458-0428.

I WANT THEM NOW!

Regarding David A. Heiser letter (July/August Portable 100), I would like to see all of David's programs. Even though Portable 100 may publish them, or selected ones, over a number of issues, I would like to be able to buy them in a block on 3.5-inch disk (PDD-2). Perhaps P100-To-Go could work with David and handle distribution. This appears to be a win-win possibility for many.

**Warren Wilson
San Jose, CA**

We'll pass along your suggestion and see what David says.

-tk

UPDATING MATCH.TIP

Late in 1985, after seeing two issues of Portable 100, I decided to buy a Tandy 200, with printer, PDD-1, and Ultimate ROM II. Though I am a regular subscriber since then, I have only bought Sardine and Power Cell (and Trip, which is unused). Although I have wanted more memory, the Datapac physical configuration was not for me, and SoundSight's Gold Card never made it for the Tandy 200, so I make do with disks. CRDFIL didn't get to the Tandy 200 either, or I might have bought it, despite having T-Base in the Ultimate ROM II.

You were awfully late in reviewing the 1100 FD, but I gave it a good look at \$649. But I realized that my outfit worked well enough that it wasn't worth the time to learn a whole new setup, which also had drawbacks. So Portable 100 has not done much for me these past five years; frustrating, except for ideas (and programs, never used) for crashes.

And now you give us Globman's MATCH.TIP with no guides for non-programmers; I could use a little help. I may not use it (my data is configured for simplicity using List [F4] followed by Find [F1], and I don't have a big need in TEXT), yet if I had it . . . ?

MOVING UP has possibilities, as does Sherman's DESKMATE, but it's going to take an awfully long time to find out.

I know why you have Daigle in there . . . but really! You've got it right when you say he is a "pinhead," but he had the grace to admit it to Juge. Lightness and informality, yes; clubfootedness, no.

**David Line
Missoula, MT**

A good columnist is loved by half the readers and hated by the other half; Daigle seems to be hitting that square-on. The MOVING UP and DESKMATE columns will take some time, but we think both will be worth it. If anyone has suggestions on how we can make any column better, please let us know.

Thanks for your loyalty all these years; we truly appreciate it. I'm sorry to hear you have not found the magazine all that useful, but at least we put you on to some great equipment when you were starting out.

Now, as for MATCH.TIP, the program listed is supposed to be placed inside another program. You can make it a stand-alone program by making these changes and additions:

After seeing two issues of Portable 100, I decided to buy a Tandy 200.

```
5 INPUT "filename";F$  
10 LINEINPUT "String to Match";M$  
15 OPEN F$ FOR INPUT AS  
1:PRINT "Match ";  
20 LINEINPUT#1,T$  
25 GOSUB 100  
30 IF FOUND THEN PRINT "FOUND:  
";T$  
35 IF NOT EOF (1) THEN 20  
40 IF NOT FOUND THEN PRINT "not  
found"  
50 GOTO 5
```

These changes make the program ask you for the text you want to search for, and the name of the text file you want to search for it in. The program then reads the file a line at a time until it runs out of file to search. Each time it finds a match, it displays it for you to read.

Hope that helps.

-tk

**BOB SCHOEBERL,
PLEASE ADVERTISE!**

I really like the Portable 100 magazine and look forward to each and every issue.

I hope you will continue to feature lots of articles pertaining to the Model 100 and Tandy 600, even though I realize you will also be expanding to cover the later portable machines.

In "your space" (ROM WITH A VIEW), you asked for input. I would appreciate a "HANGMAN" type of word game that would work with the Model 100. The ideal game would work with two to four players and would keep track of scores. The game would also have various, selectable levels of difficulty, so it could be played with individuals ranging from adults to children.

I am no expert when it comes to computers, but I have learned a lot thanks to your magazine, Club 100, and trial and error. I appreciate it so much when you print an article that makes it easier and more understandable. As I "grow" in using my computers, I have gone back to old issues of Portable 100 and eventually made later use of heretofore ignored articles and programs. With the help of your magazine and Club 100, I may someday learn to use more of the available features of my old, faithful laptops.

I hope you can get information on types of software available, and prices, from Bob Schoeberl of Minneapolis, MN (INPUT/OUTPUT, March 1991). Those of us who have the Model 100's are definitely interested. Tell him to advertise in Portable 100. I'm sure I'm not the only one who was disappointed that he didn't mention anything except the fact that he has software for the Model 100's.

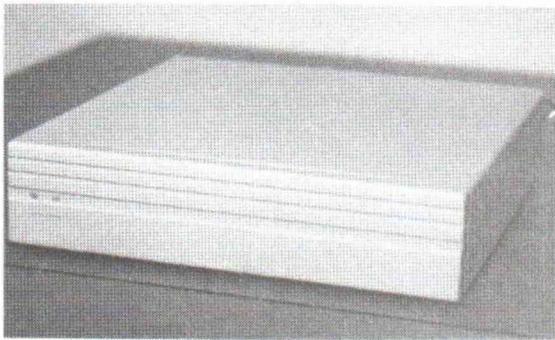
With thanks for help extended in the past, I say keep up the good work. Don't forget us Model 100 and 600 users. We may "upgrade" someday, but as for myself, not for quite a while.

**Diane Gelet
Ruffsdale, PA**

We won't forget the Model 100 users, nor any of the others using the older laptops. We are here to support them.

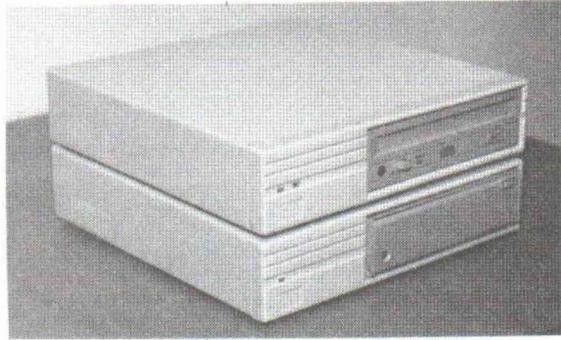
For others looking for good ideas, we still have Portable 100 back issues (\$99.95 for the 45-issue set running from Sept. 1983 to Summer 1989). Individual Portable 100 back issues cost \$5.00 each. To help you find articles of interest, we have the new article index (covers all issues published from Sept. 1983 to July/August 1991) available for only \$9.95. If you find an article for which we don't have an available back issue, we can

ANNOUNCING THE ULTIMATE IN TRANSPORTABLE DATA STORAGE DEVICES!



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High Capacity fast access self-contained Transportable Hard Disk Drive features parallel port access (See the Welport). Available in 40MB, 80MB and 100MB



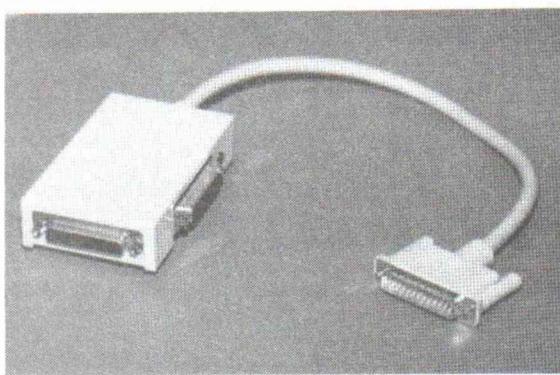
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Access (see the WelPort)

WELPORTTM

Weltec Digital Inc proudly presents **Welport**, the parallel port host adapter for IBM compatibles, laptops and notebook computers. Only 8 simple steps will turn your computer into a storage powerhouse. It's no more complicated than hooking up a printer!

The **Welport** allows concurrent use of printer and SCSI device with fast, reliable performance for each. And you can transport your device anywhere and plug it into just about any DOS compatible CPU for instant access to your data!



WELPORTTM

External SCSI Host Adaptor, smaller than an audio cassette, plugs into parallel (printer) port allows access to SCSI Drive and printer through the same device.

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TMNE says "Send it back in 30 days for a full refund if you don't agree."

WRITE ROM is the definitive word processing extension for the Model 100. PCSG produced the first text formatter for the Model 100, now sold by Radio Shack as Scripsit 100. Now, 18 months later, PCSG introduced WRITE ROM. Those who have experienced it say WRITE ROM literally doubles the power of the Model 100.

WRITE ROM — as its name implies — is on a snap-in ROM. You simply open the little compartment on the back of the Model 100 with a quarter and press WRITE ROM in. It's as easy as an Atari game cartridge. You can use other ROM programs like Lucid whenever you wish.

WRITE ROM lets you do every formatting function you'd expect, like setting margins, centering, right justifying and creating headers and footers. But it does them under function key control.

WRITE ROM remembers your favorite format settings so you can print a document without any setup, but you can change any formatting or printing parameter instantly with a function key.

WRITE ROM's "pixel mapping" feature shows you an instant picture on the screen of how your printout will look on paper.

In all there are 64 separate features and functions you can do with WRITE ROM, and some of these features are truly breakthroughs for the Model 100.

First, WRITE ROM lets you do search and replace. Any word or phrase in a document can be searched for and replaced with any other phrase where the search words appear.

Second, WRITE ROM lets you send any text (formatted or not) to any other computer over the phone with just a function key. What's more, it dials and handles sign-on and sign-off protocol automatically.

Third, WRITE ROM has a wonderful feature called Library that lets you record favorite phrases, words or commonly used expressions (often called boilerplate).

Any place you wish Library text to appear you just type a code. WRITE ROM automatically inserts the text just like a Xerox Memory Writer. Picture what you can do with that kind of capability.

WRITE ROM is blindingly fast. No one can claim faster operation. Because it is on ROM it uses virtually none of your precious RAM. It works with any printer, serial or parallel. You can make a duplicate copy of a document file under a new filename. Rename or delete (kill) any RAM file with function key ease.

This description only scratches the surface of this amazingly powerful piece of software. Dot commands allow control of such things as margins, centering, line spacing and other changes in the middle of a document. Most are WordStar™ compatible.

A mailmerge feature allows you to send the same document to every name on your mailing list, personalized for each recipient.

WRITE ROM enables you to do underlining, boldface and correspondence mode as well as any other font feature like superscripts that your printer supports, in a way that many users say "is worth the price of the program."

To underline you don't have to remember a complicated printer code. You just type CODE u, and to stop underline, CODE u again. The CODE key is to the right of your spacebar. Boldface? CODE b to start and stop. Easy to remember and do. Five different printer features of your choice.

We couldn't list all the features here. For example, you can select not just double space but triple or any other. You can use your TAB

key in a document. WRITE ROM allows you to indent. This means you can have paragraphs with a first line projecting to the left of the rest of the paragraph. WRITE ROM has a feature unique for any word processor on any computer. It's called FORM. FORM is an interactive mechanism that lets you create screen prompts so that you or someone else can answer them to fill out forms or questionnaires.

With FORM, any place that you had previously typed a GRAPH T and a prompt in a document, WRITE ROM will stop and show you that prompt on the screen. You can type in directly on the screen and when you press F8 you see the next prompt. It goes to a printer or a RAM file.

Think how you can use FORM. A doctor or nurse could use it for a patient's history with each question appearing on the screen. An insurance salesman could use it for his entire questionnaire. You could construct a series of prompts to answer correspondence, typing the answers, even using Library codes. This feature lets you answer letters in rapid-fire fashion, each with personalized or standard responses.

Before WRITE ROM you had to be a programmer to create a series of prompts. Now it's as simple as GRAPH T.

PCSG makes the claim that WRITE ROM is the easiest, fastest and most feature-rich formatter for the Model 100. We're happy to offer WRITE ROM because it expands the 100 to a dimension of text processing you cannot equal on even larger computers.

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-tk

SUPER ROM COMPATIBILITY

Regarding the letter written by Bernie Bersherse (INPUT/OUTPUT, Sept. 91), XOS is fully compatible with Super ROM. At the time of XOS development, Super ROM was my preferred application ROM (I also had UR-2 and MultiSolutions). I am not sure whether the compatibility is coincidence or subconscious planning, but had there been any conflicts, I would have corrected the problem for my own personal use.

The code in XOS that was written to access the PG Design SAFE was specifically written to interface with the Super ROM initialization code.

Paul Globman
Sunrise, FL

IN RETIREMENT

It finally happened, I've retired my T102. I'm typing this on an 1100 FD. As long as you're in business, I'll subscribe, but I'm afraid it's "adios" to my little friend.

I'd bought a Model 100 years ago, used it happily for a long time. Then I got MS-DOS fever and bought an NEC Multispeed. It was, and still is, a darn good machine. I found that toting the beast around was a pain. First there was the machine itself. Then, there were the diskettes. Last came the power supply. What's the point of having a laptop if you've got to keep your lap within three feet of an electrical outlet? It lasted four months. I sold it to a friend and went out and got myself a Tandy 102. I popped in my *Ultimate ROM II* and it was time to rock and roll! YEAH!

Well, as you all know, and fate would have it, Tandy came out with the 1100 FD. It was love at first sight. I played with a display model one afternoon for over an hour trying to convince myself that the keyboard really wasn't that bad. Alas, it was. And I've resisted valiantly for months. But last Saturday I gave in. I'm a computer consultant. I do mostly mainframe contract programming, but lately, I've been getting more PC work. I have an MS-DOS desktop machine and I've often wanted to program while traveling or just sitting by the lake. Also, I'm doing more telecommuting and I need a full-size screen. While not able to support my full development environment, the 1100 FD will allow me to develop individual programs.

As for the keyboard, it's cramped, the keys don't travel very far, and it's noisy. Anyway, I'm adjusting. My other gripe was *DeskMate*. I don't like it. I use a package called *8-in-1* by Spinnaker. It has fewer functions than *DeskMate*, but it does have a word processor, database, spreadsheet, telcom, a desktop, and a couple of other programs that are subfunctions of the main programs. They are more complete than *DeskMate's*, not full blown applications, but more than I usually need. And at \$40 it's a bargain. I haven't been able to get the programs to launch from the *DeskMate* desktop, but I'm working on it. For now I just run it from MS-DOS. All my other software runs just fine.

Since I do very little disk access, I've been getting great battery life. I can use the machine on and off all day before the low-battery indicator starts to blink. It recharges in a couple of hours and the charger is about the size of a pack of cigarettes. Battery life has been the biggest barrier to my getting a new machine. There are some slick machines out there, but their battery life is ridiculously short. And who needs a lit display? I figure if I can't read a book, I can't program. The

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It was time to rock and roll! YEAH!

1100 FD display had been excellent in all the light conditions where I've used it.

I find the single disk drive to be a minor inconvenience. A long time ago I put together an MS-DOS travel pack containing my most used software. They fit on four disks; DOS, utilities, and *8-in-1*. I also carry a couple of blanks. I've got a small zippered notebook that holds them. The only major problem I've run into is with my publishing package. It assumes two drives and, although I can fit all the files on only one disk, I haven't been able to get it to stop looking on drive B for stuff. So I keep getting MS-DOS messages that eventually scroll the document off the screen. I can refresh the document, but my headings disappear and I have to go hunting around with the mouse to find them.

Well, s'about it. I'm thrilled with my new toy. I'll probably keep the Tandy 102, using it mostly for writing. It's just so darn handy to toss the little bugger into the car and go. Whoa! Am I having second thoughts? Nah! Then again ...

Joe Zammarelli
Charleston, SC

As far as *DeskMate* is concerned, as my doctor always said when my grandmother told him, "It hurts to do this," and complained about an ache, "Well, then, don't do that." If you don't like it, don't use it. The ROM chip supplying *DeskMate* in the 1100 FD is replaceable (if you didn't know already), so why not get the technical manual from Tandy and replace the code with something you can use, like library routines or small utilities?

Battery life has been and will always be a problem. No matter how long your batteries last, they always die when you need them the most. With the notebook portables, at least, the battery life is becoming reasonable.

A backlit display is indeed an extravagance for most people. If you use your portable outside, the backlit display is next to worthless (black characters against a dark brown background). On the other hand, a non-backlit display is hard to read in low-light situations.

-tk



The Magic Mirror

"Reflections" on life, laughter, and learning with your Model T.

Hiya. This month's column is going to be a little different. Nothing too structured; just some idle Model T type thoughts. No product reviews, no programming tips. Just think of this month's entry as a potpourri of prose, a cornucopia of concepts, a veritable Veg-O-Matic of verbiage.

Thank you. See you next month.

Heh, heh. No, actually, I wanted to talk to you about—well, you. You look tired. Are you working too hard? Are you having enough fun? No? Well, throw some fresh batteries in your Model T and—

...What's that? Yes, I said the Model T. Look, just because it doesn't have VGA graphics and an internal SoundBlaster card doesn't mean you can't have any fun with your Model T. You just need a different mindset. A more Zen-like outlook.

I may not know you personally, but I know this about you: You can read. And, despite the best efforts of our country's public school system, you probably still have an imagination. If you've also got a Model T and a few friends or family members handy, try this old game with a new twist:

CHAIN, GANG!

Gather some people around the table. Fire up the Model T and, right before their startled eyes, type the opening of a short story. Just one quick opening paragraph. At the end, add two carriage returns, then scroll the screen back to the beginning of your paragraph.

Slide the Model T over to the person next to you and have him or her [*"him"* from here on, strictly for simplicity—Ed.] read that first paragraph silently. Then, they continue the story with a second paragraph of their own, add two carriage returns, set the screen to the begin-

ning of *his* paragraph (and no higher), and pass it on.

Each subsequent player will read (again, silently) ONLY the last paragraph before adding a paragraph of his own. Make up a few additional rules that suit the situation, like a two minute time limit and three turns per person, and you're all set.

When everyone's had his last turn, give the unit to the best reader and have him read the results out loud. Odds are it'll be hysterical. If it is, print out a few copies for everyone.

Bingo. The Gestaltest Story Ever Told.

OK, so that's great when you have a flock of other people around, but what about those times when you're on your

*Despite its age,
your Model T is
still a remarkable
little device.*

own? No problem. After all, you still have access to one of the most interesting people you know: you.

For example, you may be a more interesting person than you realize. Problem is, we all tend to keep our tires in the well worn ruts of Life's highway. Just easier that way, right? Well, here's a detour to a new road: a daily journal.

CAPTAIN'S LOG

Hey, why not? You're entitled. Sure, maybe you're not a famous politician or

a movie star, but so what? Movie stars may do more interesting things than you do, but that doesn't automatically make them more interesting people.

A daily journal can be a great way to get in touch with the inner you—someone you may have been too busy to pay much attention to lately.

By a daily journal, I'm not talking about a detailed record of your day (3:00am—Neighbor's barking dog woke me up again. 7:00am—Got out of bed. 9:00am—Kicked neighbor's dog. 9:05am—Kicked neighbor.). No.

Here we're talking about something a little less rigid. We're less interested with exactly what happened to you, and more concerned with what you got out of your day. An abstract summation. How do you FEEL about what happened to you today? WHY do you feel that way? What did you LEARN from what happened today? It doesn't have to be a long winded essay (like, for example, this column). Sometimes, just a few brief sentences will cover it.

One of the secrets to writing a daily journal is to turn off your self-critic when you're writing. Write it just for yourself. Don't worry about spelling. Don't worry about grammar. Don't worry about using fancy words or pretty turns of phrase. Just get the essence down.

When you start running out of room in the Model T, dump the entries to hardcopy, three-ring punch the paper, and store them in a binder. Even if you never go back to the binder and read them again, the simple act of writing the journal entries in the first place is, in itself, a good thing.

This kind of writing can help you uncover the messages and the meanings hidden in the everyday occurrences of your own life. It can help you clarify the very process of thinking itself. And it will force you to spend a little time each day

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June		OUT							
July		OUT	OUT			combined July/Aug. issue	combined July/Aug. & Sept. (Summer 1989)	Not Published	combined July/Aug. issue
August		OUT				OUT			
September	Premier Issue								
October		OUT							
November									
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in thoughtful consideration of your own life—something most of us do far too little of in these hectic times.

Learning without thought is labor lost.—Confucius.

Whoa, got a little heavy there. Alright, here's a good one—something that combines the fun of the first idea with the focused intent of the second one.

VISUAL IMPRESSIONS

Got an instant camera? Good. Put a fresh pack of film in it, toss it in the bag with the Model T, and go downtown. No matter where you live, if it's bigger than, say, Cowflop, Montana, something interesting is going on downtown.

Now, armed with your trusty Polaroid InstaSpend, start taking pictures. Whatever strikes you. People. Places. Events. Plants. Buildings. Trees. Cars. Whatever. Once you have all ten shots made, take your prints and your Model T to a sidewalk cafe, a picnic table, or a shady tree in the park—anywhere you're comfortable.

Turn the pictures face down and shuffle them, then put them (still face down) into one stack. Take the top photo, flip it over, and start writing about it.

Yep. Cold. Just start writing. What does the picture show? What does it mean? What were you thinking about

when your finger pressed the button? Does the setting remind you of someplace you used to live? Do any of the people remind you of someone you used to know?

Keep going. If this photo were being used as the cover shot on a new

*If you limit
your thinking,
you'll lose a lot
of the Model T's
potential.*

hardcover novel, what would the title be? What would the book be about? Go ahead—write the "jacket blurb" for it.

THROUGH THE LOOKING GLASS

OK, you get the idea. This process can yield some eye-opening results. You may be a more interesting person than

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you give yourself credit for. With a little practice, you may even discover that you have a flair for writing.

You never know until you try.

Despite its age (and blatant lack of continued refinement by Tandy—don't get me started), your Model T is still a remarkable little device. But don't think of it as just a computer. Because if you limit your thinking to those traditional constraints, you'll lose a lot of the Model T's potential.

Use your imagination, and you'll see that your Model T can be much more than just the limited tool the designers envisioned when they created it. The suggestions above are just examples intended to prime the pump of your own creative well. They are but a few of the ways that your Model T can be transformed into a magic mirror that, used properly, can help you see the real you hidden beneath the surface.

Michael Daigle

Michael can be reached by mail at 2125 North Farragut, Portland, OR 97217, on CompuServe (ID 76166,3303), and GEnie (DAIGLE).



COMPATIBILITY: All Model T, MS-DOS, and Atari.

Airborne Laptopping: Tachometer Calibration

Forget expensive gadgets—all you need is right there in your lap!

by Sean G. Dwyer

Did Lindbergh need two engines to get to Paris? Do cowboys need seatbelts? Does the inscription under the Statue of Liberty say "Send me your RAM rich, your baud besotted, your IBM clones ..."? NO! So why is there so much defeatism in *Portable 100* articles these days? In computer life cycles the Model 100/102 may be getting a bit long in the tooth, but it still does some jobs better than many of today's wallet wrenching, bell & whistle enriched laptops.

This article describes a program which calibrates the tachometer of a general aviation aircraft while in flight. The program can be run on an MS-DOS machine or an Atari, but the Model T is particularly well suited for the task. Think about it... You are sitting in the left seat holding altitude and RPM (revolutions per minute) constant. Your computer is on the right seat, byte-ing along merrily on its own internal power. Can you adjust the screen to be readable from that distance and position? Can you read the screen from any distance? Can you hit the right key without hitting one of its neighbors? Few computers can match the Model 100 in such a situation.

WHY BOTHER?

It has been said that half the small aircraft in the general aviation fleet get better than book performance and the other half get better than book fuel efficiency. The reason is simple, all of their tachometers contain errors and it just depends on whether the errors are in the positive or negative direction. Is there a safety issue involved? Possibly, if the error is such that the engine is operated at the wrong RPM for too long a time or if you consume more fuel than anticipated on a long trip.

Aircraft tachometers have two main

```
=====
Enter selected Tach Dial setting (RPM)
? 2300
Enter ACTUAL time in seconds
? .81
Enter INDICATED time (decimals of hour)
from Tach counter
? .02
```

Figure 1. Input of data.

components, a *counter-drum* (like the odometer on a car) which is mechanically geared to the engine and a tach *needle dial* which depends on eddy currents set up by a rotating magnet attached to the tach cable. The counter-drum reads in hours, tenths and hundredths of hours. Because of the mechanical linkage, the counter-drum is always accurate when the engine is operated at its design setpoint—a particular RPM chosen by the manufacturer and which is usually either 2,310 or 2,566. At higher or lower RPMs, the hourmeter will roll over more rapidly or more slowly respectively, which explains why a tachometer rarely shows a 1.00 hour increase in total engine operating time at the end of a one hour flight.

A pilot rarely pays attention to the tachometer counter-drum while in flight, since it is primarily a "before and after" instrument. The tachometer needle is another story however. It is used to set the engine to particular RPMs during engine runup, takeoff, cruise, and landing. Being indirectly linked via a magnet, this part of the instrument is more likely to have an unpredictable error.

TACHOMETER CALIBRATION

There are several

ways to calibrate tachometer needles that depend on visual observations made on a rotating propeller. One of them involves standing at the unpleasant side (i.e., in front) of a spinning propeller and squinting through a hole in a flat piece of aluminum which has a vibrating "reed" on the airplane side of the hole. The frequency of the vibration is adjusted via a restricting slide until the motion of the propeller appears to stop. The position of the slide converts the frequency of the reed's vibration into the RPM of the propeller. The method is relatively inexpensive but it requires two people, one in front of the spinning propeller

```
When Tach dial reads 2300
Actual RPM is..... 2280
```

```
Run another RPM setting? (Y/N):
? y
```

Figure 2. Screen output of results.

flipping the reed until a good reading is obtained and the other inside the cockpit to make sure the aircraft does not decide to take off by itself (an uncommon but not unknown occurrence which is *really* embarrassing).

The other common method for calibrating an aircraft tachometer is more elegant. An adjustable strobe light is pointed at the spinning propeller and tuned until the motion of the prop appears to stop. This device costs \$300-400, reason enough to make it rare

```
OUTPUT FROM TACHOM.BA:4
Tachometer Setpoint is 2566
2100 on Tach dial means 2099 true RPM4
2200 on Tach dial means 2199 true RPM4
2300 on Tach dial means 2280 true RPM4
2400 on Tach dial means 2399 true RPM4
2500 on Tach dial means 2309 true RPM4
```

Figure 3. DATA.D0 output file with combined results.

among the tools of mechanics at small airports. A more convoluted and very limited version of this method involves strobining a prop against a 60 Hz fluorescent yard light at night.

THE PROGRAM

The first thing the *TACHOM.BA* program (Listing 1) does is ask if the tachometer setpoint is already known (lines 10-25) and, if not, then determines whether it is 2,310 or 2,566 RPM (lines 30-56). The determination is done by taking the aircraft up into the Wild Blue Yonder, setting the engine to 2,310 RPM (2,300 would be close enough), and then measuring how long it takes for a tenth of an hour to roll over on the tachometer counter-drum. If the time is six minutes and forty seconds (plus or minus ten seconds), then the tachometer setpoint should be 2,566. If it takes six minutes (plus or minus ten seconds), then the setpoint is probably 2,310. If it takes six minutes and the setpoint is in fact 2,566, then it would have to have a 256-RPM error on the low side while running at 2,310, an unlikely situation. This simple

onds in actual elapsed time); however, longer *indicated* time would minimize the impact of any errors in reading the *actual* elapsed time. In any event, it would not be necessary to exceed a tenth of an hour. Figure 1 lists the inputs requested by the program (lines 103-150).

NUMBER CRUNCHING

The calculation is really simple. All that is required is division of the *indicated* time by the *actual* elapsed time, with the result multiplied by either 2,310 or 2,566, as determined earlier. This provides the *actual* RPM at which the engine is run-

ning. The program records this and the corresponding tachometer dial reading in *DATA.DO* (line 180) and on the screen (Figure 2 and lines 190-195). It also asks if another RPM setting is to be calibrated and the input/calculation/output process can be repeated. When no further calibration is desired, the output file *DATA.DO* is closed (Figure 3).

Earlier I indicated that *most* tachometers in small planes have one of the two setpoints mentioned. Some exceptions were listed in the *Light Plane Maintenance* article which motivated me to write this program. These were the MAI 98480-

**One of them
involves standing
at the unpleasant
side of a spinning
propeller**

test is based on the fact that the tach's counter *must* flip over a tenth of an hour every six minutes if the *actual crankshaft RPM* is the same as the setpoint of the tachometer, i.e. 2,310 or 2,566.

If the time it takes for one tenth of an hour to rollover is outside these limits, then your tachometer may be an uncommon type (lines 60-62), more about this later.

Once the setpoint is known, the program opens an output file called *DATA.DO* (lines 100-102). Since you are still up in the Wild Blue, just set the engine to selected RPM settings (2,200, 2,300, 2,400 etc) and measure how long it takes for some easily measured amount of time to roll over on the counter-drum. With a reliable stopwatch it can be as little as a hundredth of an hour indicated on the counter-drum (i.e. about 40 sec-

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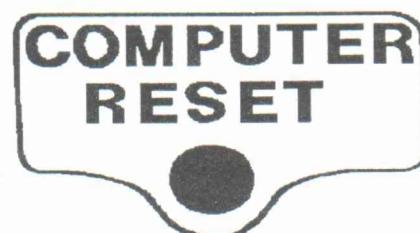
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2400 Bps Pocket Rocket: Practical Peripherals Pocket Modem

Batteries not included—they're not (usually) needed.

by Stan Wong

The old adage that good things come in small packages is never truer today than in the computer industry. A good example of this is the Pocket Modem from Practical Peripherals. The Pocket Modem puts a speedy 2400 bps (bits per second) modem into a package about the size of a cigarette package. It's small in size but big on performance. And best of all, you don't have to feed it batteries or plug it into a wall socket! The Pocket Modem draws its power from the phone line and your computer's serial port.

The Pocket Modem is advertised as Hayes compatible. I found during my testing that there is "Hayes compatibility" and then there is "Hayes compatibility."

I prefer to use internal modems whenever possible, but sometimes you just need to use an external modem. For instance, the 300 bps modem of the Model 100 is getting a little bit dated these days, and a little extra speed would be nice.

With this in mind I set out to see if the Pocket Modem would be able to speed up communications for my Model 100 as well as provide telecommunications capability for my modem-less WP-2.

WHAT YOU GET

The Pocket Modem package comes with the following items:

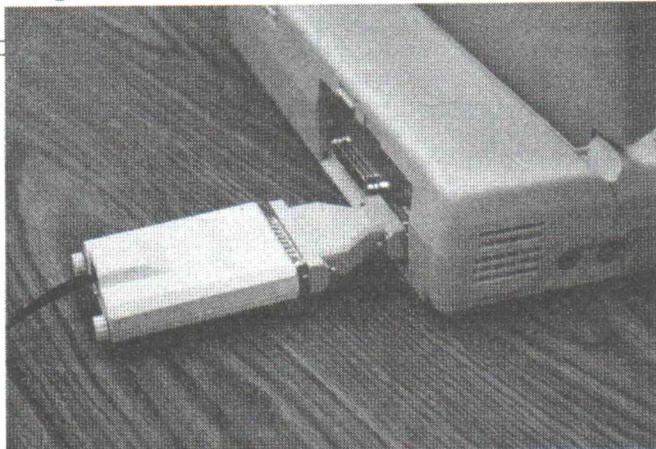
- Pocket Modem (Dimensions: 1" d x 3" w x 2.23" h)
- Manual
- Phone Cable
- 25-pin/9-pin adapter
- CompuServe sign up kit
- 5-year warranty

You need to supply an RJ11 phone

jack and a working telephone line. There is only one option: a battery pack, for which you must supply a 9V battery. I'll explain later why you may need one.

INSIDE THE POCKET

The PPI Pocket Modem is part of a new breed of so-called "line-powered modems." This is different from the traditional pocket modems which are battery powered. Once you understand the technology you can understand the advantages and pitfalls of using one.



The Practical Peripherals Pocket Modem is small, light, and doesn't require a battery or power supply.

ber of values between a high value and low value.

The modem's job is to convert outgoing digital data into analog data that's compatible with the phone system. It performs the reverse job on incoming data. Let's call this part of the modem the "analog section."

Most modems today are billed as being Hayes compatible. In the early days of the microcomputer revolution the D.C. Hayes company set the ad hoc standard for modems with its wildly successful Smartmodem series. Hayes compatibility usually means that the modem will recognize the AT command set. The AT command set are commands you or your communication program issue to the modem to perform a certain task. For instance, *ATZ* means "reset yourself" and *ATDT* means "dial the phone using touch-tone codes." Let's call the part of the modem that interprets the AT commands the "AT command section."

The advertising on these modems can be a little bit misleading. They generally claim to draw their operating power

You don't have to feed it batteries or plug it into a wall!

Before we dissect the Pocket let's review the basic job of a modem. Computers operate on *digital* data, that is, "ones" and "zeros" represented by relatively fixed voltage levels. The phone system operates on *analog* data, that is, voltages that can assume any of an infinite num-

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from the telephone line. While this is true, it's not the whole story.

The Pocket modem uses power from the telephone line to drive the analog section of the modem. The power for the AT command section is drawn from the computer's serial port. Some portable computers have the problem that the serial port does not provide a sufficient voltage for the Pocket Modem to work. The best thing to do is to try the Pocket Modem with your configuration before you buy it. If that's not possible, then purchase it where you can obtain a refund if it doesn't work.

SPEAK SOFTLY AND CARRY A SMALL MODEM

The Pocket Modem comes with a unique "Software Speaker" which sends detailed call progress information to your computer screen. Traditional external modems come equipped with a speaker so that you can monitor the progress of the call. If the line is busy you can hear it through the speaker. Pocket modems can't spare the space and power for a speaker, so it is hard to tell what exactly is going on. Either you get the CONNECT indication or you don't. If not, it's anyone's guess as to what went wrong.

The software speaker sends back dialing progress information. You invoke

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this by typing ATX5. A sample session is shown below (the first line is typed by you; and the rest are sent to your screen by the modem):

```
ATX5DT8339915
Dialtone
T833915
Ring
Carrier..
CONNECT 2400
```

The Pocket Modem doesn't work with all the computers that I tested.

THE TESTING STANDARD

I set a testing baseline by using the standard in modems: a genuine Hayes Smartmodem 1200. This is an external modem that runs on AC power.

I tested the Tandy 1500 HD, Model 100, Tandy 200 and WP-2 with the Hayes

modem. All performed flawlessly.

The Pocket Modem doesn't work with all computers that I tested. On the first testing pass, it would only work with my Tandy 1500 HD DOS laptop. I had no luck using it with the Model 100 family or my WP-2.

POWER BOOST

I was about to write off the Pocket Modem as a useful adjunct to the Model 100 family when Practical Peripherals released an optional battery pack. It is about the same size as the modem, takes a 9V battery.

The battery pack is a \$20 option that fits between the modem and your serial port. It adds about three inches in length, bringing the modem/battery pack combination to just over six inches in total length.

The optional battery pack is required if your computer serial port does not supply the correct voltage for the modem.

MODEL 100

The Model 100 family (this includes the 102 and 200) needs the optional battery pack for the modem to operate. With this addition the modem worked as expected. The additional speed was exhilarating compared to the 300 bps I'm used to.

There are several things you should note about using the Pocket Modem, or any external modem, with the Model 100 family. On the Model 100/102, the screen scrolling rate limits the effective baud rate to about 600 bps. This limit does not apply if you are using a protocol, such as Xmodem, to transfer data. The screen scrolling rate is higher on the T200.

Also, you won't be able to use the automatic dialing functions. I used the modem manually, as in the example above. There is software available to get around this limitation and the screen scrolling limitation. Check bulletin boards such as the Portable 100 BBS or CompuServe for information.

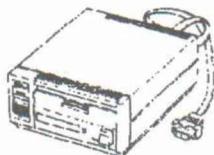
The modem/battery pack combination just over six inches long, and the phone cable entering from the rear of the modem, you'll need at least eight inches of space behind the M100. You'll also need to support the modem, since the length of the unit is long enough to bend the M100 serial connector.

WP-2 PROBLEMS

The PPI pocket modem requires that the DTR and RTS lines on the RS-232C interface be asserted at all times. This is what powers the AT command control-



PC-PDD



PC <---> Tandy Portable Disk Drive

Tandy WP-2 and Model 100/102/200 owners! Do you have an IBM PC or compatible? Are you tired of squirting your files through a null-modem cable? Tired of setting communications parameters? Of turning your PC into a Portable Disk Drive (PDD) emulator?

PC-PDD is the first program which lets you attach your Tandy PDD to your PC and support the WP-2 and Models 100/102/200 as well as both PDD models (original 100K and the current 200K Model 2)!

- o Copy files to/from the PDD
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- o DOS file editor & browser
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PC-PDD requires an IBM PC or 100% compatible, 512K memory and a serial port. Send check or money order for \$49 + \$3 S&H (CA residents add 7.75%) or circle the reader service number below. A F-F gender adapter is required. Add \$7 if you need one. Specify if your PC has a 25-pin or 9-pin port.



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ler in the modem. It must also receive power from the phone line for the analog section of the modem. If either of these items are missing, the modem will not work.

The Pocket Modem would not work with Whoops, my WP-2, even with the addition of the battery pack. I am forced to conclude that the WP-2 does not assert the DTR and RTS lines as required by the modem. Evidently the Model 100 does. The Hayes Smartmodem I used for testing didn't care. It worked fine. So much for "Hayes compatibility." (To be entirely fair to PPI, modem manufacturers usually mean that they support the Hayes AT command set when they say "Hayes compatible.")

In some respects it's fortunate that the Pocket Modem doesn't work with the WP-2. During testing I had to wrestle with nine inches of modem, battery pack, and 25-pin/9-pin adapter. Nine inches makes a mighty fine lever to do damage to the connector on the WP-2.

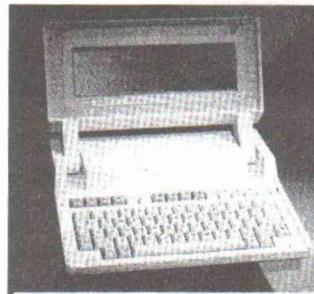
I had to find enough desk space to put the WP-2 flat so I could stick a pad of paper under the modem to support it. Otherwise, I could see the serial connector bending inside the case. Being able to see the screen with everything laying flat was a real problem, too.

1500 HD OPERATIONS

A communications session with the Pocket Modem should be exactly like using your regular external modem. If you use your Tandy's built-in modem, then you have to make a small change.

**You may not even
need to open the
manual if you
know modems.**

The Pocket Modem connector assumes a standard XT 25-pin DB-25 connection. The 1500 HD uses the more common AT 9-pin DB-9 connector found on most notebook computers these days. You will have to use the supplied 25-pin/9-pin adapter. This adds another three inches to the length of the modem. As described before, you'll have to sup-



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Westlake Village, CA 91362
(818) 706-0333

The Practical Pocket Modem
PC version -- \$159.00
Macintosh version -- \$199.00

port the modem/adapter or risk bending the 1500 HD serial connector.

The optional built-in modem is configured as COM2. Attaching the Pocket Modem to the serial port will necessitate a change in your communications program to COM1. That's it! If you're already using an external modem, you're already set to go.

MANUAL

The Pocket Modem manual is a 100+ page bound booklet. It's very well written and provides all the essentials of operations. If you are familiar with Hayes-compatible modems, most of the material will be familiar.

T-200 Enhancement

XOS (Cross bank Operating System) will enhance your Tandy 200 and allow the three banks to share programs and data. XOS will bring a new level of computer functionality at the MENU, from BASIC, TEXT, and TELCOM.

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Modem communications is an arcane art. The manual does a good job of providing the technical information needed to pinpoint and diagnose some communications problems. It's fairly technical in nature, but then again, I've never seen "A Modem Guide for Idiots" either.

Because of the Pocket's Hayes-compatibility, odds are you may not even need to open the manual if you are familiar with modems in general.

PPIFORUM

Practical Peripherals supports the Pocket Modem, as well as all of their other products, on CompuServe. Type GO PPIFORUM at the CIS prompt. During testing of the Pocket Modem I usually received a response from the Sysop or PPI Tech Support within 24 hours. The Pocket Modem comes with a CompuServe introductory membership. Of course, having the Pocket Modem is a great reason to start using electronic services like CompuServe if you don't do so already. It's an electronic age, so come join the fun!

EOT

Those of you familiar with telecommunications jargon know that EOT stands for "end of transmission." As you might have guessed by now, the heading

implies that I'm out of space and my conclusions are imminent.

The Practical Peripherals Pocket Modem is a quality product at a very reasonable price. Its small size, lightness, and functionality make it a good complement to the "small, functional,

connector and a serial port that provides sufficient power, the Pocket Modem is an outstanding accessory and value. For the machines that I tested, the combination of modem, battery pack, and/or adapter really made the outfit unwieldy. The modem performed admirably in every case, however.

By day, Stan Wong tries to convince people that being a Portable 100 contributing editor is worth more than the paper it's printed on. By night, he tries to convince his wife that being a Portable 100 contributing editor is worth all the late nights writing these missives. [Trust me, Mona, it's worth it!—MN] You can contact Stan in care of Portable 100 or directly at P.O. Box 28181, Santa Ana, CA 92799-8181. If you prefer the electronic medium, use GEnie address STAN.WONG, CompuServe address 70346,1267, or Internet address dasun!wongs@Sunkist.West.Sun.Com.

Having the Pocket Modem is a great reason to start using electronic services.

value" ethic of Tandy notebook computers. Because of the quirks I have noted, I must supply a caveat to you to test the modem for your configuration. Don't expect it to work for all of your computers just because it works for one.

If you have a computer with a 25-pin

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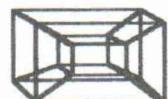
ADDRESS

CITY

STATE

ZIP

EFFECTIVE DATE



From Starlet to *DeskMate*

Can an "old" laptop user move from CP/M to MS-DOS and survive the trip?

by Linda M. Tiernan

It will probably surprise you—well, maybe it won't—to learn that the NEW PRODUCTS pages for this magazine are banged out on a laptop. My machine of choice has always been the NEC-8401, a.k.a. the Starlet. I have had it for five or six years now—as long as PICO and P100 have resided at PCIC.

Not only are the NEW PRODUCTS pages put together on this little machine, but every time you receive something you ordered via the Reader Service numbers, and the label at the top does NOT say *Requested from PORTABLE 100 Magazine*, that's me, too. When the big Reader Service Information computer breaks down, I bring the Starlet into the office and crank out the mailing labels via Starlet's *FILER* program. I am not kidding. Starlet's *WordStar* and *Filer* program have saved more than one deadline here. Its two other built-in programs, *TELCOM* and *CALC*, shoot the files to Nuge and/or Terry so that they can "pretty them up" for layout in the magazine and provide summaries of what I've been doing to meet the latest crisis (how many labels sent out, to which companies, etc.).

I admit that one of the Starlet's greatest charms is that it's paid for. I have two disk drives from a closeout company in Florida (\$200 or so), a Tandy DMP-105 printer (\$150), a Silver-Reed EXP500 daisywheel printer (\$350), a M100-to-Centronics printer cable (\$15), an RS-232 cable and null modem (from P100, of course). I also have an NEC PC-8451A *Spell-to-Go* spell-checker cartridge and two RAM cartridges, one from NEC and one from Node Systems. And that's the whole show—and has been, for six years. I am a firm believer in Michael Daigle's "Zen" less-is-more philosophy. In six years, I have written countless novels (I run a part-time typing service), short stories (my own), movie scripts (the typing service), theses, poetry, class worksheets (I also teach), autobiogra-

phies, arrest warrants, NEW PRODUCTS for three publications, and Reader Service. The keys on my Starlet shine from use, I'm proud to say. It has been repaired once for a problem with the display, by Roan Electronics in Brooklyn, and they did a good job. Other than that, no problem—ever.

SHOULD AULD ACQUAINTANCE ...

The Starlet, however, is a CP/M machine in an MS-DOS world. This has created special problems. My files, sent to Nuge or Terry, must be reformatted to avoid as many carriage returns as possible, and sent in ASCII format. (Thank Heaven, *TELCOM* on the Starlet is a breeze.) My mailing lists are incompatible with any equipment except another Starlet. Ditto for the spreadsheets. And my spelling-checker cartridge works only with small files on the A drive, so everything must be broken down in pieces and loaded there to be checked. The Starlet has an LCD screen in shades of grey, difficult to see under many conditions. (I refuse to let anyone try to backlight my screen since I saw one malfunction—spectacularly.)

I have clung like a barnacle to my simple, capable Starlet. Absolutely nowhere have I seen a better filing system, nor a simpler-to-use calc program, and *Wordstar-To-Go* is practically my second skin. But my eyes are getting older and tireder, and it's getting tougher to see that 80-by-25 screen in the evenings. Computers are getting faster, too; and single-sided double-density diskettes are getting harder to find (I paid \$2 apiece for the last ten-pack I bought, and if I'd waited a little longer I think the guy would have paid me to take them away.) And more and more often, I receive MS-DOS diskettes with interesting things on them. If they were 5.25-inch I had to go to the office to use them. If they were 3.5-inch I had to go to PCIC.

I gritted my teeth and bought a Tandy computer, with something called *DeskMate*.

THAT'LL TEACH ME

The first thing I said to myself was, "Oh poop, George Sherman's been writing columns about this all these months and I haven't been reading them!" So I explored my new computer and this new "program" called *DeskMate* at the same time.

I wasn't thrilled with it at first. In the great Tandy tradition, the manual sucks rocks. I don't care in the least how thrilled your boss will be because you gave her your football tickets when you found you had a time conflict on *Calendar*. What I want to know is how to make the printer setup stop saying there's no printer attached when I can see one, right there, plain as day, hooked up to it.

But then I started using the *Teach Me* tutorial system included on *DeskMate*—and I started to change my mind. George is right—it's great. He's also right about Michael Banks' book *Getting the Most Out of DeskMate 3*. It's worth every cent; it's the manual that should have come with *DeskMate*.

And then I set out on the formidable task of making this new *DeskMate*/Tandy combo somewhere near as good as my Starlet.

My first advantage was that, like the Starlet, the menu is a point-and-press operation. Instead of a simple bar that you move around with your arrow keys, however, *DeskMate* is what they call a GUI (I guess), a graphical user interface. It amounts to the same thing: Highlight what you want, then press the *Enter* key. It took me a while to get used to all the cute little pictures, but I liked the idea of being able to shuffle them around. I also got down to the serious business of putting the files I needed on the Tandy, in a menu format that would make them as approachable as they are on the Starlet.

First was *WordStar*. *TEXT* is cute; but it ain't *WordStar*. As a matter of fact, *WordStar 6.0* ain't *WordStar*, either. It's... I don't know what it is, except that you need two people to install it and one had better be an engineer. It's tough to tell a program like *WINSTALL* what you want out of a word processing program before you have even used it. I had an edge from six years of using *WordStar-to-Go*, but it was not much of an edge. *WINSTALL* still resides on my Tandy, and I would never dare take it off, because God knows what it will tell me someday I don't have installed that I should. My speed has also cut down considerably while I adjust myself to the new locations of some of the function buttons.

At this point, I would like to make a comment about *WordStar*. It was originally designed so that the typist would not be forced to remove his/her fingers from the keys in order to initiate a command. A speed typist could keep on typing. I am a speed typist, and on 6.0 I can't do it. In order to initiate some of these commands, I have to remove my hands from home position, and on many enhanced keyboards there's no guarantee that the keys you're feeling again are the home keys. You need to look—and down goes the speed.

Printers were also a problem. The Silver-Reed is on *WINSTALL*'s printer list—but my DMP-105 wasn't. They went as low as DMP-130, and no lower. I called *WordStar 6.0* Tech Support (a different phone number from *WordStar* International headquarters), and they didn't know what I could substitute. They made suggestions for an alternative method to those I had already tried. It "kinda sorta" worked, just like two or three others I have on record, and gets me near some kind of a decent result—but not quite. Once I started printing things I had typed on the new *WordStar*, I found a new problem. The Silver-Reed has never sheet-fed well—paper catches on the print head pointer. When I lift the lid to guide the second sheet of paper into the printer, the printer goes off-line. When I put it back on-line, it—and *WordStar*—forget what it's been doing. So I either had to chop the pointer off, or give up on sheet-feeding. Since many of my jobs for my typing service require that I use thesis paper, or special letterhead, or other cut forms, the pointer is gone.

Ironically, the Tandy DMP-105 is on the printer choice list for *DeskMate* and the Silver-Reed isn't. So I can do a great job on my dot-matrix printer if I use *DeskMate's TEXT*, and a great job on my daisywheel printer if I use *WordStar*, but not vice versa.

On the other hand, it's a pleasure to be able to search both forward and backward in a file, and to have a spell checker capable of checking a 125K file, and automatic reformatting. It all balances out.

DETAILS, DETAILS

The next problem that the *DeskMate* programs had to handle (that the Starlet handled with only minor difficulties) was mailing labels. *DeskMate* has an *Address* program. It consists of one file. Dan H. and Norman and all those people whose Reader Service cards I see almost monthly are not on my Christmas card list (no offense), and I would rather not have them mixed in with my Eisenhower College alumni and my dentist in a single gargantuan file. And, unfortunately, after much experimentation, I found that *DeskMate's Forms Setup* and *Filer* program are not the way to go: They can create mailing labels, but with only one possible "code." And I am not going to type in Melissa's name 23 times when she circles 23 different Reader Service numbers. *ADDRESS* allows you to enter different "lists" (read: Reader Service Numbers) and sort and print by these sublists in pre-defined "mailing label" formats. However, it is s-l-o-w. (And it only takes 25 "sublists" maximum.)

Oddly enough, this is one of the few dilemmas for which the *DeskMate* manual suggests a solution. Use *ADDRESS*, but rename your private file until you're done. Start a new file with all this business information. When you're done, copy the "business" file to somewhere else and/or rename it, and rename your "personal" file *PERSONAL.ADR*. That's the only data file the *ADDRESS* program looks for. It's not fast, it can't do four lines, but it is reliable.

I haven't used *DeskMate's TELCOM*. The reason: I've installed *PROCOMM*, because I consult for two businesses who use it, and I need to be able to simulate their problems. So far I have met success, even with Starlet files, except for the minor annoyance that the Tandy has a nine-pin RS-232 port while everything else I own has 25-pin ports.

I also haven't used *PC-LINK*, though *DeskMate* (both program and manual) push it unabashedly. Give me time; it's a big jump from Starlet *TELCOM* to a fancy MS-DOS machine. I'll get there.

The *DeskMate* calc program, *WORKSHEET*, does what spreadsheets are supposed to do: give you space to spread things out. It is neither plain nor fancy; it's a spreadsheet. My only complaint is that so much of the formulas, etc., are undefined and unexplained! I realize that if you're mathematically inclined,

you should already know what *ABS* is, but a page to refresh your memory would be nice. Also, once you see what a nice job they did with *Sound* and *Music*—two *DeskMate* programs that did not come pre-installed on my computer, by the way, although they were in the disk package—you would know how well they can handle "refresher" and "reminder" pages. The *Music* pages practically teach you music before you begin. (Needless to say, this manual is separate from the main *DeskMate* manual.) What a job they could do with *ABS* and *INT*!

I have bargain-basement *BASIC* for my Starlet. I am not a programmer, but every once in a while it comes in handy. On the Starlet, I program in *WordStar's* non-document mode. It's nice to know *GW-BASIC* is here for the MS-DOS machine, though I may use it only once in a blue moon. Likewise the *DRAW* program. Going from words to pictures is a new concept for me, and it will take me time to adjust to drawing on my computer. I still use arrow keys, too. I don't care for mice. Even on *WINSTALL* I opted for the "classic" *WordStar* menus rather than the newer "pull-down menus" that are more mouse-oriented.

THINGS TO COME

Among the things I have learned wandering around my 40 meg is that *DeskMate* is installed in ROM (the Tandy's drive D) and didn't have to be pre-installed via diskette on C:\DESK, the way it was. (My Starlet laughs; it knows that all good programs are on ROM.) But I haven't moved anything, or shuffled it around, and left D:\DESK right where it is, untouched. Someday I shall tackle that. In the meantime, I learn all the facets of *DeskMate* as it was installed, and my two "mystery programs" (*Sound* and *Music*) which were not. (They have tutorial programs which were also not installed. My next project will be figuring out how to run them.) I play with shareware and copy 3.5-inch diskettes to 5.25-inch diskettes and vice versa, and play *DeskMate Hangman*. I do plenty of things I couldn't do on the NEC 8401A.

But, Terry has just called—the RSI program has just dislimned—and the Starlet and I are on the way to the office. See if your Reader Service information labels say Requested from PORTABLE 100 next month. If they don't, it was the Starlet—but maybe not for long.

Linda M. Tiernan is Assistant Director at the Peterborough (New Hampshire) Town Library. She also consults and teaches. Her hobby is editing the NEW PRODUCTS department for Portable 100.

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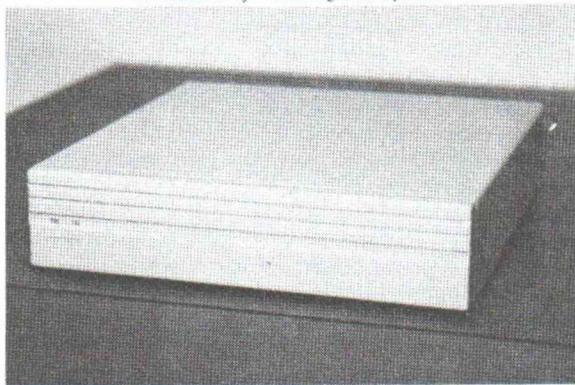
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A Model 100 on A Desktop: *Telecommuter*

*Give your MS-DOS machine the simple
and capable Model T interface.*

by Peter Ross

I have a love-hate relationship with MS-DOS programs. I crave their power, but loathe their long, and unintuitive sets of commands. Why can't IBM compatibles have the Model T's familiar and simple, yet capable interface?

Ah, but they can! If you feel the way I do about MS-DOS, Sigea Systems has the solution. *Telecommuter* is an integrated word processing and telecommunications program for MS-DOS, which emulates and enhances the functionality of the Model 100 while overcoming most of its limitations. It uses the same commands as the Model 100, simplifies file transfers between the two machines, and facilitates cooperation between your two working environments. Since it runs on an MS-DOS platform, it can provide you with a much larger workspace, and many enhancements that the Model 100 programmers were unable to cram into the handy Tandy's 32K "brain".

WORD PROCESSING FEATURES

Like the Model 100's main menu, *Telecommuter* takes a middle ground between MS-DOS's command line and the Macintosh or Microsoft Windows GUI (graphical user interface). As with the Model 100, you have the speed and ease of semi-graphically moving around between filenames, yet you can always go into BASIC on the Model 100, or back to the DOS prompt in *Telecommuter* if you need to have hands-on control over your computer.

Both programs minimize the number of keystrokes required to perform common editing functions. It takes nine keystrokes to select, cut/copy, and paste in *WordStar*, but only three in *Telecommuter* or Model 100 *TEXT*. True, with the more recent versions of *WordPerfect* or Micro-

soft Word you get automatic footnoting and other fancy fea-

tures but you also pay for it in RAM cramp, and ease of doing your core task—WRITING. Table 1 presents a comparison of the number of keystrokes it takes to accomplish the same task in several different word processors.

Telecommuter's text editing keys operate basically the same way as Model 100's. The names of the function keys are displayed across the bottom of the screen all the time, so you can use the program without having to refer to a manual. And the function key assignments are the same as the Model 100's. In the editor, F9 is used as the PASTE button, and F10 is used to call up the help facility. The Model 100 editor's control key codes are also reproduced faithfully. Table 2 shows the few differences between the cursor movement keys in the two programs, and some of the enhancements.

But *Telecommuter* doesn't stop there. It also includes some enhancements that

Feature	Model 100	Telecommuter	WordPerfect	WordStar
Select, cut and paste	3	3	7	9
Exit and save edited file	1	2	5	3
Import text from disk/cass	2	2	5	4

Table 1. Number of keystrokes required to perform common word processing tasks

are reminiscent of the best ROM-based Model 100 word processing programs. Print formatting is accomplished using dot commands. Pages can be numbered and given headers and footers automatically. Text can be right-justified, centered, indented, outdented or included from another file when printing. Special fonts such as boldface, underlining and italics can be embedded into the text.

In addition to an 80-column by 21-line workspace *Telecommuter's* editing enhancements include adjustable tabs, search-and-replace, a toggle between insert and overstrike modes, and keys for deleting (and re-inserting) one word or line at a time. *Telecommuter's* printing and editing enhancements are summarized in Table 3.

Telecommuter's *SAVE* and *LOAD* commands differ slightly from their Model T counterparts. For the most part, these differences are either enhance-

ments, or reflect differences which are inherent to the design of the two computers. While you are working on one file, *Telecommuter* allows you to either save, load or append to another file on disk. One very useful enhancement is that you can and cut, copy, append, save, de-

Function	Model 100	Telecommuter
CTRL+letter keys	<—same—>	
CTRL+RIGHT/LEFT	<—same—>	
Move to top/bottom of file	CTRL+UP/DOWN	CTRL+HOME/END or CTRL+PGUP/PGDN
SHIFT+cursor keys	<—same—>	
Delete letter at cursor	SHIFT+BKSP	DEL or CTRL+BKSP
Delete to end of word	/	SHIFT+DEL
Delete to end of line	/	GREY MINUS
Insert most recently deleted letter	/	INSERT
Insert most recently deleted word	/	SHIFT+INSERT

Table 2. Cursor movement — A comparison of Model 100 and *Telecommuter* text editors

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Features	Model 100	Telecommuter
Search & replace	no	yes
Oversize mode available	no	yes
Help facility	no	yes
See directory from within a file	no	yes
Operating system available from within file	no	yes
Number of columns on screen	40	80
Number of lines on screen	8	21
Formats when printing	no	yes
Print format previewing	no	yes

Table 3. A comparison of miscellaneous features.

lete, or print selected text (i.e., only a portion of your document) to a second file.

And now the best news. *Telecommuter* allows you to edit much larger text files than does the Model 100. It handles files up to 65K intact. Larger files are handled in chunks of about 50K at a time. Let's say, for example, you want to work on a 250K file. First you select the filename with the widebar cursor and press ENTER. *Telecommuter* loads in the first 50K of text and leaves you at the bottom of the file. You make your changes in this portion of the document, and move on to the next 50K of the text by hitting ALT-F2. You edit this portion of the text, and continue through the document by hitting ALT-F2 each time you've finished a section. When you're done, just hit F8 as you normally would. This is not the most elegant way to handle large text files, but it is certainly a big improvement on the Model 100's editor.

Working with 50K-65K blocks is more convenient than it might first appear. Even when writing something as large as a book, it is usually easier (and safer!) to work on only one chapter at a time. Using *Telecommuter*'s file inclusion dot command, you can string together all the chapters of the book when it comes

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time to print it.

Telecommuter makes search-and-replacing text easy in large files by remembering your prompts. For example, you could change all the occurrences of "Portable 100" to "PORTABLE 100" in the first 50K of your book, press ALT-F2, and easily make the same changes in subsequent portions by accepting the prompts supplied by the program.

Both the *Find* and *Search* (for *Search and replace*) functions are able to perform "fuzzy" searches using a single-character wildcard. Using this feature, you could change all occurrences of "forth" and "fifth" to "faith" by specifying f??th as the search string.

Additional enhancements to the word processing capability include a key to take you to the beginning of the next line

Fast File Transfer

One of the most attractive features of the Model 100 is that you can use it to enter text or data anywhere—while lounging in the sun, or on a flight to Nepal. Once back to their home or office, however, many users transfer their work to a desktop to massage it into final copy. *Telecommuter*'s *Fast File Transfer* module simplifies the process of exchanging files between laptop and desktop by presetting the communication parameters in the desktop, and supplying prompts on the screens of both computers.

on the screen, and a program that reformats documents by removing unnecessary "soft" carriage returns from imported text.

ADDRESS DATABASE

Telecommuter also provides an address database module that is like the Model 100's *ADDRSS* program. In this incarnation, the program takes on the character of a full-fledged address database with a data entry template similar to those one might use with *Lucid Data*, *CRDFIL*, or *T-base*. One welcome enhancement is that the program may be used as a phone dialer from both the telcom and the address database modules.

In another enhancement, the database may be used to create mail-merge letters. I've used this feature to print out a newsy Christmas letter to all my friends. With the mail-merge feature, I was able to personalize the heading and greeting on each letter, and to create corresponding mailing labels. You can also keep separate address lists for different groups; e.g., friends vs. companies and business associates.

It's worth mentioning that you may import your existing Model 100 *ADRS.D0* file and use it directly if you choose to, by removing or renaming the default *TC.ADR* database file in your *Telecommuter* program directory. This type of file compatibility reduces your start-up time considerably. Alternatively, you may choose to convert your *ADRS.D0* file to *Telecommuter*'s database format using a utility supplied with the program.

Finally, you can "clone" entries to save time in entering the same information twice on similar records; merge items from two different lists; and sort address lists on any of nine different

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Feature	Model 100	Telecommuter
Built in Xmodem	no	yes
Autodial phone at 300 baud	yes	yes
Autodial phone at 1200 baud	no	yes
Macros	no	yes
Change area code without altering database file	no	yes
Reports time spent online	no	yes

Table 4. A comparison of Model 100 and Telecommuter telecommunications features.

fields, including last name, phone number, city, state, zip code, country, company and either of two comment lines.

TELCOM

The telecommunications module, as you might expect, has all the strengths of the Model 100's, with several enhancements. F5 hangs up without leaving terminal mode. F6 changes address databases. With F7, you can instruct the program to use or ignore the area code information you have entered in the database, thus allowing you to save all entries in the standard long-distance 1-nnn format.

Let's say you live in Manhattan and want to make a local call to someone in St. Louis, where you are currently attending a conference. By pressing F7, you can set the local area code to 1-314. The program will compare the 1-314 area code of the person you're calling to the 1-314 you've just entered. When it sees the number 1-314-123-4567, it will delete the 1-314 before dialing. There are similar features for adding 1- to medium-distance numbers within your area code, and for using telephone credit cards.

Finally, the program includes the ability to send and receive files using the Xmodem error-checking protocol. Telcom junkies know how important it is to use a protocol such as Xmodem for en-

suring that data is not corrupted during transmission.

SUPPORT

The people who sell *Telecommuter* know their product well. Unlimited free technical support is provided by co-owner Harry Brawley, who reminds me of the Maytag repairmen that you see in the ads on TV; he gets very few calls. Presumably this is because the program is "SO SIMPLE" to use.

Harry is responsive to customer needs and requests. In the course of preparing this review, I made several suggestions, many of which he accepted and decided to incorporate into subsequent versions of the program.

QUIBBLES

I have found almost all aspects of *Telecommuter* to have been well executed. I would be remiss in my duties as a reviewer, however, if I didn't point out its very few blemishes. Personally, I found the current manuals somewhat confusing. And in fact, I did better by following the instructions in the README file on the program disk, and

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Model 100 X-TEL

X-TEL is a TELCOM enhancement program for the Model 100. It is the only Xmodem program available that allows the user to transfer .CO and .BA files between desktop and Model 100 without having to convert them to ASCII first. This is a real convenience on the road, or anytime when you don't have a Portable Disk Drive available. You can just slip a disk into a friend's PC or Macintosh, attach a cable and download your files—even programs—without having to recreate them from time-consuming and RAM-hogging loader programs. X-TEL allows you to see a directory of files, delete files, run BA-SIC programs, and access the TEXT editor of your Model 100 while online. In addition, X-TEL allows you to download directly to storage devices such as the Node Datapac, the PCSG/Cryptonics 96K Memory Expansion RAM, the Booster Pak, or the extRAM, as well as other devices which are no longer commercially available.

ignoring the printed documentation. I just copied everything onto my hard drive, typed in TC at the C:\TC\> prompt, hit the return key (ENTER) and everything worked out fine. The folks at Sigea claim that they usually ship the program with only a reference card and no manuals, since almost everything you need to know is prompted on the screen. They've promised a thorough rewrite of the documentation in the near future.

SOFTWARE REVIEW

Some might find the lack of need for a manual refreshing.

There are a few features that I wish *Sigea* had included in the program. In particular, I wish that there were function keys that would let you rename and copy files at the word processor menu screen. These functions can be accomplished by "shelling out" and executing these commands at the DOS prompt, but it would be more convenient if rename and copy commands were integrated into the program. *Sigea* has promised to add these functions to the next version of the program.

Another item on my wish list would be to include more file-transfer protocols than just Xmodem. Kermit, for example, is essential for exchanging files with many mainframes, and there are other, more recent protocols that enable more rapid file transfer than Xmodem. To be fair, however, Xmodem is by far the most widely used file transfer protocol in existence, and it is still the only protocol supported by many online services.

CONCLUSION

Growing up from a Model 100 to an MS-DOS computer has many advantages. The vastly greater power of the MS-DOS machine and its improved display make editing many times faster and easier. *Telecommuter* provides excellent upward compatibility from the Model 100. The word processor is simple, familiar and easy to use. Cursor control, and manipulation of blocks of text is accomplished with a standardized, bare minimum of cursor movements. The print-formatting dot commands and text editing enhancements will be very familiar to users of *Super ROM*, and for the most part to users of *T-Word*. Model 100 users will also be pleased by the many enhancements to the address database and telecommunications programs.

I like *Telecommuter*. Its operation is almost identical to the Model 100. Because function key prompts are always visible, or just the touch of a button away, very little needs to be memorized. And *Telecommuter* requires very little in the way of hardware power. It will run on very low-powered machines. *Telecommuter* lives up to its intention of combining the best features of the Model 100's environment with the power of an IBM compatible. It makes the transition to MS-DOS SO SIMPLE.

Peter Ross has taught English as a Second Language in New York and Tokyo, where he acquired his first Tandy computer in 1986. Recently he has added a megabyte of RAM and upgraded his "Model 100 environment" to an 80286 processor that runs at 12MHz. He may be reached on CompuServe (72027,3653) or MCI Mail (448-6073).

Versions of *Telecommuter*

Telecommuter comes in several different configurations. The smallest package consists of a word processor and file transfer program. The larger packages consist of various combinations of add-on options.

Write-It is for people who want word processing and file transfer but don't need full terminal emulation capabilities.

Classic is the recommended choice for the person who is moving from a Model T to an MS-DOS computer. The commands are nearly identical—only there are more of them—so it's easy to learn. *Classic* includes fast file transfer, an address database, Xmodem, and the ability to "shell out" to DOS from both the telcom and word processing modules.

Plus has all the features of *Classic* plus a Host mode, so you can call your home computer from a remote location to transfer files, leave messages, and have access to all of its resources. It is even possible to run *Lotus 1-2-3* from a Model 100 keyboard, although you'll have to rely on the desktop's screen to see what you're doing.

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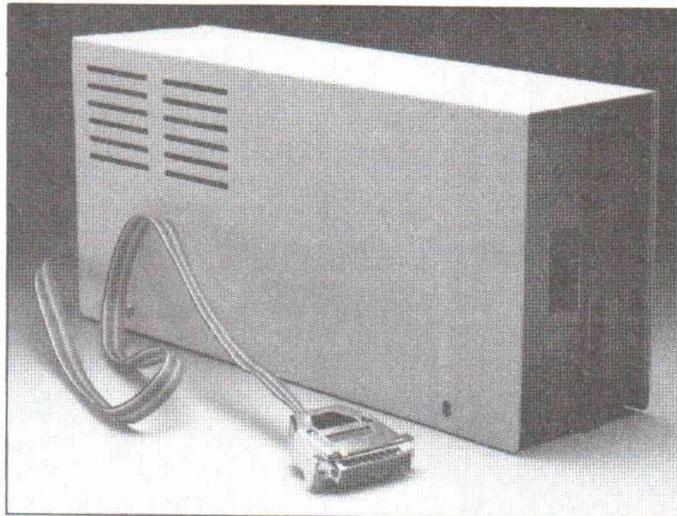


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New Products for the NEC

Daniel Cohen, an expert in matters pertaining to NEC notebook computers, has announced the release of three new products: *StarDisk*, *Dan Cohen's 128K RAM*, and *XPROM 3.0*.

StarDisk is a disk file manager program which allows NEC PC-8401 Starlet and PC-8500 series computers to interface with Tandy's tiny, battery powered Portable Disk Drive 2. *StarDisk* is an easy-to-use, menu-driven software program which allows you to copy, move, rename, erase and view the contents of files, format disks, and view and print alphabetical disk file directories. The *StarDisk* file manager program, including 3.5-inch disk and comprehensive User's Guide, is available for just \$59.00, including shipping and handling.

Daniel Cohen's 128K RAM is small enough to fit in the breast pocket of your business shirt. It contains four 32K blocks and a switch allowing you to designate which block is active as Bank 3 in your computer. Unlike NEC's car-

tridge, 128K RAM allows you to switch between blocks without turning off the power of your computer. When 128K RAM is removed from the computer, a standard lithium battery keeps files intact. After seven years of use, you can replace the battery without losing data. Price is \$179.00, including shipping and handling.

XPROM 3.0 has just been released as an upgrade to earlier versions of Daniel Cohen's *XPROM for NEC Notebook* software chip for NEC PC-8201A and PC-8300 series computers. *XPROM 3.0* contains a total of seventeen programs and files, including a text formatting and printing program, RAM Bank Transfer routine, file information manager, etc. The *XPROM 3.0* software chip and corresponding set of instructions is available for \$80.00, including shipping and handling.

For more information, contact Daniel Cohen, Box 237, Plymouth NH 03264 (800)338-1839. Or circle #64 on your Reader Service Card.

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For information concerning the wide range of barcode scanners or graphics/text scanners available at Optical Data Systems, or for more information on the *Voyager-SX* (price: \$2995.00), contact Optical Data Systems Inc., 653 North Ash Street, Escondido, CA 92027 (619)745-6563. Or circle #63 on your Reader Service Card.

100duet Version 1.02 Release

Cabochon, Inc. has released Version 1.02 of *100duet* (for Tandy-Mac connection). This upgrade is being sent free of charge to registered *100duet* users.

Changes and additions in Version 1.02 include: improvements in making multiple copies, some changes in icons and graphics, *TEXT* translations now creating files with a MacWrite II icon ... and, of course, a little bug squashing. The upgrade packet includes a question-and-answer sheet as well.

For more information, contact Cabochon, Inc., 1740 Massachusetts Avenue, Boxborough MA 01719 (508)264-4648. Or circle #61 on your Reader Service Card.

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Telecommuter, a.k.a. "One Button Mail"

Sigea Systems, Inc. demonstrated the latest version of *Telecommuter* at the Lap and Palmtop Show held at the Sheraton Centre Hotel in New York City on April 16 and 17, 1991. *Telecommuter*, also referred to as *One Button Mail*, is a fully automatic front end for popular electronic mail services such as IBM PROFS and MCI Mail. *Telecommuter* allows busy executives, handicapped people and remote professionals to access electronic mail services with a minimum number of keystrokes and without detailed knowledge of any specific electronic mail service.

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High-Performance BASIC Programming with PowerBASIC

Bob Zale, author of Borland's *TurboBASIC*, has enhanced his original work to produce *PowerBASIC* for Spectra Publishing. For example, he has added a new debugger and incorporated features that make it easier to use.

He included dozens of built-in functions to eliminate the need to write involved routines for everyday tasks such as SORT, SCAN, VERIFY, REPEAT, INSERT/DELETE, and much more. BCD math is supported to totally eliminate rounding errors.

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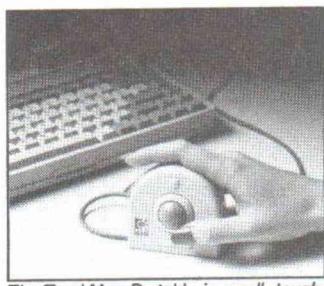
BASIC, you'll have no trouble making the switch to *PowerBASIC* as most of the files are completely compatible.

PowerBASIC offers five new data types. Of these, perhaps the most significant are the two BCD types which offer both fixed-point and floating-point storage of decimal numbers. With 18-decimal digit precision, "round-off" errors encountered by programmers of financial applications are now eliminated. In *PowerBASIC*, a proprietary scaled integer format is used which significantly reduces code overhead while retaining absolute decimal accuracy.

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PowerBASIC V.2.1 requires 640 K on an IBM or 100-percent compatible. Price is \$129.00 plus \$6.00 shipping and handling (plus sales tax in California). For more information, contact Spectra Publishing, 1030-D East Duane Avenue, Sunnyvale, CA 94086 (800)245-6717 (in CA (408)730-9291). Or circle #67 on your Reader Service Card.



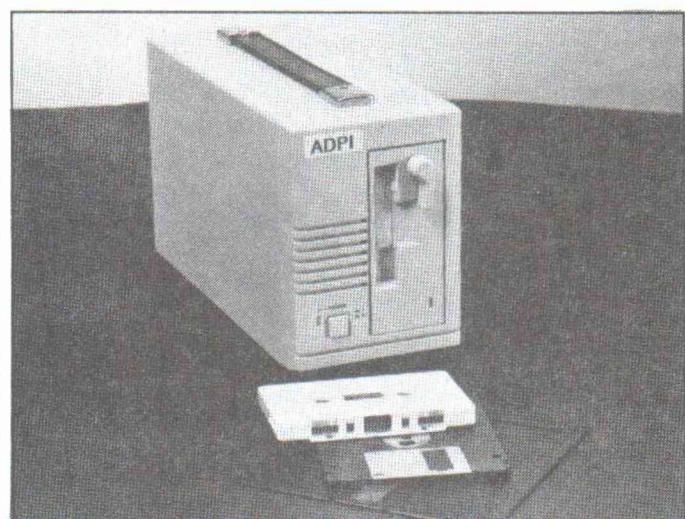
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TrackMan Portable Mouse

Logitech has released the *TrackMan Portable Mouse*, a thumb-operated pointing device especially designed for portable computers. It can be operated in a vertical position or in the hand. The user's thumb operates the ball, and the index finger operated the primary button on top of the device. The second and third buttons are also thumb-operated. *TrackMan* Portable is easily attached to a keyboard using a custom spring-loaded, one-piece mounting device that clamps to the side of the keyboard. It accommodates left- and right-handed users.

The *TrackMan* Portable features a default resolution of 200 dots per inch (dpi), with adjustable resolution (through software) ranging from 50 dpi to 15,000 dpi. A new version of Logitech's *MouseWare*, version 6.0, is included with the *TrackMan* Portable. The new software utility and driver contain a *Microsoft Windows* Control Panel for configuring the mouse and its software controls such as ballistics, click-lock, button orientation, and click speed, as well as a similar control panel for DOS operation. Several aspects of the software have been optimized for laptop use, such as enhanced cursor visibility for easier viewing of the cursor on a laptop screen. *TrackMan* Portable is 100-percent Microsoft-compatible and is guaranteed to work with all popular software applications.

Attaching cable and adapters are also included. *TrackMan* Portable is covered by a 30-day money-back guarantee and a limited lifetime warranty. Suggested retail price is \$169.00. For more information, contact Logitech Inc., 6505 Kaiser Drive, Fremont, CA 94555 (415)795-8500. Or circle #71 on your Reader Service Card.



The ADPI Parallel Tape Backup System is small and convenient.

ADPI Parallel Tape Backup System

Analog & Digital Peripherals, Inc. (ADPI) has released a multiple PC backup solution, the *ADPI Parallel Tape Backup System*. The *ADPI Parallel Tape Backup System* operates over the PC parallel printer port. Designed for MS-DOS computers, including laptops, the *ADPI 8-Bit Parallel System* features: Portability—one backup system can be used for every PC in the office; Simplicity—no installation of costly controller or adapter cards or special cables; Convenience—hooks up over the parallel printer port; 160MB Storage; Easy-to-use menu-driven IBM SAA/CUA interface & DOS Command line; a variety of backup and restore modes;

the ability to span a large backup over several tapes, or backup small tasks on one tape; Full, online help and menu prompts and status window during Backup and Restore; Read-After-Write verification; low noise and no fans that pull in dirt; and multi-language support for foreign countries. The backup unit weighs only six pounds, and measures 4 by 6 by 10 inches. It uses reliable low-cost digital cassette media.

Single-unit price is \$1,555.00. For more information, contact Analog & Digital Peripherals, Inc., P.O. Box 499, Troy, OH 45373 (513)339-2241. Or circle #69 on your Reader Service Card.

Electronic Templates

The *Electronic Template System (ETS)* from Rawtech Software is a TSR (Terminate and Stay Resident) program that replaces your physical template. Pressing the hotkey combination brings up a menu listing all of the application's (i.e., *WordPerfect*, *Lotus*, *WordStar*, etc.) commands. You can then select the desired command and *ETS* executes it for you. Guessing is eliminated since all functions are listed by name, highlighted in color and displayed in large clear text. You can create custom templates suited to your work habits and naming preference, for quick and easy execution. Search—by letter, or command portion—for any command created, coming "standard" with the application being used, or from the thousand-plus command templates included with the *ETS* package.

ETS can be used with *WordPerfect*, *Word*, *Multimate* and most other word processing applications; *Lotus*; and DOS. It is automatically invoked when you enter the application. The program requires 62 K of base memory, and is DOS- and *Windows 3.0*-compatible. The *ETS* utility lists for \$99.00.

For more information, contact Rawtech Software International Corp., 13982 Cambie Road, Suite 173, Richmond, BC V6V 2K2 Canada (604)279-9086. Or circle #68 on your Reader Service Card.

COMPATIBILITY: Model 100, 102, and 200 (sometimes others, with changes).

SYLCAT.BA:

Evaluate Categorical Syllogisms

Think you're logical? Let's find out.

by Paul Globman

SYLCAT.BA (Listing 1) evaluates categorical syllogisms. A *categorical syllogism* consists of three sentences, two of which are premises, and the third of which is the conclusion inferred by those premises. All sentences in the syllogism must be of form A, E, I, or O type sentences, structured as follows:

- A—All S is P
- E—No S is P
- I—Some S is P
- O—Some S is not P

You must first provide two premises. If the premises are properly formed, then you will be prompted for a conclusion. If the conclusion is valid (based upon the premises), the program will confirm its validity.

PROGRAM OPERATION

The prompt for a premise is ... *P->*. A premise is a simple sentence in the form:

<quantifier> <noun phrase> is <noun phrase>.

If the sentence is not in that form, you will hear a beep and be prompted again. If the sentence does not begin with the word "all," "some," or "no," then the word "all" will be assumed and inserted. So the sentence "Whales are mammals" will become "All whales are mammals." If the predicate noun phrase begins with the word "not," the quantifier will be modified when possible. For example, "Men are not gods" will become "No men are gods." "Nowhales are not mammals" will become "All whales are mammals." "Some mammals are not whales" will remain "Some mammals are not whales."

After entering two premises, they are analyzed and if they are found to lack the qualities that will lead to a conclusion, then a beep will sound and an appropriate error message is displayed. Such errors might be ...

- A) two negative premises:
No students are wage earners
Some wage earners are not voters
- B) lack of a "middle term":
All wild horses are free spirits
Some spirits are not tangible objects
(i.e., "spirits" <> "free spirits")
- C) failure to distribute the "middle term":
All bananas are yellow fruit
Some yellow fruit are poisonous fruit

CONCLUSION

If the two premises are acceptable then you are prompted for a conclusion by a *C->* prompt. The conclusion is examined, converted in form (if necessary), and checked for validity. Some

errors may be ...

- D) negative conclusion required or unsupported.
- E) a "term" is distributed in the conclusion without having been distributed in the premise.
- F) a "term" in conclusion was not referenced in premise.

If there are no errors in logic, and the conclusion is valid, then the program announces *Valid conclusion!*

LOGIC & SUGGESTIONS

I did not use any of the esoteric logic operatives that *BASIC* makes available. The testing is done through brute force by looking at all possibilities.

Language can often be quite cumbersome so I recommend the use of mnemonics for noun phrases. For example, "All bananas are yellow fruit" can be entered as "All B are YF."

The program allows upper or lower case input, but it is converted to lower case for evaluation. The verb "is" can be used instead of "are."

COMMENTS

This program was written to simulate the results offered by Venn diagrams. The syllogism in question must be in the form of a "categorical" syllogism.

The "hypothetical" syllogism is not considered. This program is not a logic course and discussion of "middle term," "subject term," "predicate term," "quantifiers," and "distribution" is left to reference books on the topic of logic.

Paul can be reached by modem on CompuServe (72227,1661) and GENIE (P.GLOBMAN), or by mail at 9406 N.W. 48th St., Sunrise, FL 33351 (please enclose SASE if you're requesting a reply).

```

1 REM SYLCAT.BA by Paul Globman
2 REM Copyright (c) 1990
5 CLEAR 512
6 PRINT -----
10 GOSUB 500:GOSUB 600:X1$=X$
15 Q1$=Q$:S1$=S$:C1$=C$:P1$=P$:T1=T
20 GOSUB 500:GOSUB 600:X2$=X$
25 Q2$=Q$:S2$=S$:C2$=C$:P2$=P$:T2=T
30 PRINT:PRINT "P->"X1$:PRINT "P->"X2$
35 GOSUB 100:GOSUB 200
40 GOSUB 510:GOSUB 600:X3$=X$:PRINT
45 Q3$=Q$:S3$=S$:C3$=C$:P3$=P$:T3=T
50 GOSUB 450:GOSUB 300:GOSUB 400
99 PRINT"Valid conclusion!":RUN
100 REM ----- middle term test

```

Listing 1. SYLCAT.BA evaluates categorical syllogisms.

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Circle 179 on reader service card.

```

105 IF (S1$=S2$) AND (P1$<>P2$) THEN 135
110 IF (S1$=P2$) AND (P1$<>S2$) THEN 140
115 IF (P1$=S2$) AND (S1$<>P2$) THEN 145
120 IF (P1$=P2$) AND (S1$<>S2$) THEN 150
125 PRINT "no valid middle term"
130 GOTO 480
135 IF T1<3 OR T2<3 THEN RETURN ELSE 155
140 IF T1<3 OR T2 MOD 2=0 THEN RETURN EL
SE 155
145 IF T1 MOD 2=0 OR T2<3 THEN RETURN EL
SE 155
150 IF T1 MOD 2=0 OR T2 MOD 2=0 THEN RET
URN
155 PRINT "middle term not distributed"
160 GOTO 480
200 REM ----- double negative test
210 IF T1 MOD 2=1 THEN RETURN
220 IF T2 MOD 2=1 THEN RETURN
230 PRINT "two negative premises"
240 GOTO 480
300 REM ----- negative conclusion test
310 IF (T1+T2+T3) MOD 2=1 THEN RETURN
320 PRINT:PRINT "negative conclusion ";
330 IF (T1+T2) MOD 2=0 THEN 350
340 PRINT "required":GOTO 360
350 PRINT "unsupported"
360 GOTO 480
400 REM ----- distribution test
405 IF T3=3 THEN RETURN
410 IF T3=1 THEN 425
412 IF T3=2 THEN GOSUB 415:GOTO 425
415 IF P3$=S1$ AND T1<3 THEN RETURN
417 IF P3$=S2$ AND T2<3 THEN RETURN
420 IF P3$=P1$ AND T1 MOD 2=0 THEN RETUR
N
422 IF P3$=P2$ AND T2 MOD 2=0 THEN RETUR
N
423 GOTO 445
425 IF S3$=S1$ AND T1<3 THEN RETURN
427 IF S3$=S2$ AND T2<3 THEN RETURN
430 IF S3$=P1$ AND T1 MOD 2=0 THEN RETUR
N
432 IF S3$=P2$ AND T2 MOD 2=0 THEN RETUR
N

```

Circle 30 on reader service card.

Three Model 100 Books!

★ **The Model 100 Program Book** by Terry Kepner and David Huntress. 51 useful BASIC programs for home, office, and education: bar graph, depreciation, annuity, pie chart, forms creation, invaders game, memory scan, touch typing tutor and many others-\$19.95.

★ **60 Business Applications Programs** for the TRS-80 Model 100 Computer by Terry Kepner and Mark Robinson. 60 powerful programs for interest calculations, annuities, depreciation, invoices, breakeven sales analysis, and more-\$21.95.

★ **Inside the Model 100** by Carl Oppedahl "...an excellent Guide" —New York Times. A thorough guide to the Tandy Model 100. Learn about A.L. programming; disassembled ROM routines; keyboard scanning; UART, RS-232C, and modem; Clock/calendar chip; Interrupt handling; 8085 instruction set-\$24.95.

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Circle 127 on readers service card.

```

445 PRINT "no prior distribution"
446 GOTO 480
450 REM ----- verify final terms
455 IF (S3$<>S1$) AND (S3$<>P1$) AND (S3
$<>S2$) AND (S3$<>P2$) THEN 470
460 IF (P3$<>S1$) AND (P3$<>P1$) AND (P3
$<>S2$) AND (P3$<>P2$) THEN 470
465 RETURN
470 PRINT "term in conclusion was not"
475 PRINT " referenced in premise"
480 BEEP:RUN
500 REM ----- get input
505 LINE INPUT "P->;X$:RETURN
510 LINE INPUT "C->;X$:RETURN
515 LINE INPUT "-->;X$:RETURN
600 REM ----- Parse the sentence X$
605 X=INSTR(1,X$, " ")
607 GOSUB 800
610 Q$=LEFT$(X$,X):IF Q$="all " THEN 625
615 IF Q$="some " OR Q$="no " THEN 625
620 X$="all "+X$:GOTO 605
625 X$=RIGHT$(X$,LEN(X$)-LEN(Q$))
630 C$=" is ":X=INSTR(1,X$,C$)
635 IF X>0 THEN 650
640 C$=" are ":X=INSTR(1,X$,C$)
645 IF X=0 THEN BEEP:GOSUB 515:GOTO 600
650 S$=LEFT$(X$,X-1)
655 P$=RIGHT$(X$,LEN(X$)-LEN(S$+C$))
660 IF LEFT$(P$,4)<>"not " THEN 685
665 P$=RIGHT$(P$,LEN(P$)-4)
670 IF Q$="all " THEN Q$="no ":GOTO 685
675 IF Q$="no " THEN Q$="all ":GOTO 685
680 C$=C$+"not "
685 X$=Q$+S$+C$+P$
690 IF Q$="all " THEN T=1:RETURN
695 IF Q$="no " THEN T=2:RETURN
700 IF LEN(C$)>5 THEN T=4:RETURN
705 T=3:RETURN
800 REM ----- U/L CASE SENSITIVE
805 FOR I = 1 TO LEN(X$)
810 L$=MID$(X$,I,1)
820 IF L$=" " OR L$=>"a" THEN 840
830 L$=CHR$(32+ASC(L$)):MID$(X$,I)=L$-
840 NEXT:RETURN

```

COMPATIBILITY: Model 100 and Model 102 only.

CHPEEK Changes CHDUMP

Customize the CHDUMP screen dump program to suit your printer's whims—or your own.

by Cory Hawkins

When the screen dump program *CHDUMP* was published (*Portable 100*, May '90), I thought it would be fun to play with. I found, however, that *CHDUMP* was more than fun—it was quite useful.

But I also found a few minor problems, one of which was that the output to my portable printer, a Diconix 150, was not centered on the page. A minor problem, perhaps, but I sometimes bind the output pages and need enough left margin to accommodate this. So when Mr. Becker wrote to I/O of his problem with *CHDUMP* ("Screen Dump Woes," *INPUT/OUTPUT*, Dec. '90), mine was also solved in the reply. Mike Nugent mentioned the specific commands within the code that governed my problem (left margin), and all was solved. Almost.

If I (or Mr. Becker) need to experiment with different values, we must remove, edit, and reinstall *CHDUMP*. And any future changes require the complete removal of all .BA programs. This could get quite tedious. It seemed to be a problem screaming to be solved. I figured that all that's needed is to *POKE* a new value into the program to alter the command. But at which memory address?

A quick *PEEK* program (see below) printed the memory address and the contents of that address to a file. Scanning that file, I found the command sequences and their addresses. With the address in hand, I checked the Diconix printer manual for the needed command and *POKE*d its ASCII value into the address.

Now, all this may not seem like I've saved any work from the reinstallation procedure. However, once I have the needed address, I only need to install *CHDUMP* once. Any subsequent changes can be made with the proper *POKE*. If my left margin (the problem

that started this) isn't quite right, all I do is *POKE* in a new value.

So what are the addresses of these commands? That depends on your installation. My *CHDUMP* sits on a fully installed *TEXT+* ("TEXT... Plus!" March '90). Therefore, it's different than if it were at the first available .BA address. However, knowing the relative position of the command within the code, you can find the actual memory address.

The commands (that I've explored) for the printer begin with the escape code (ESC, ASCII 27), followed by a character that defines the printer function, and then the parameter of that function. The command for the left margin (27, 108, 10) begins 215 bytes from the start of the *CHDUMP* program. So to change the left margin to 16, for example, I poke 16 in place of the 10, which increases my left margin and centers the printout on my Diconix.

The printer commands in *CHDUMP* and their relative addresses are as follows:

- Left margin—27 (215), 108 (216), 10 (217)
- Page feed—27 (218), 51 (219), 24 (220)
- Print density—27 (222), 76 (223), 208 (224)
- Printer reset—27 (227), 64 (228)

To find the actual memory address, add the relative address (in parentheses) to the starting address of your *CHDUMP* installation. Starting address can be found with a program such as *CHANGE.BA* (found on the *Portable 100 BBS*, May '90 *P100-To-Go* disk, CompuServe, or GEnie). Then run my "peeker" program (Listing 1) until you recognize the code. Alternatively, if *CHDUMP* is the first .BA program in memory, and you have 32K of RAM, simply add 32768

```
10 CLS:OPEN "PEEKED" FOR
OUTPUT AS 1
20 FOR X = 200 TO 250
30 N = PEEK(aaaaaa+X)
40 PRINT#1,N;aaaaaa+X
50 PRINT@50,"Working..."
60 NEXT
70 MENU
```

Listing 1. CHPEEK.BA helps locate the printer commands in CHDUMP. Substitute CHDUMP's starting address for aaaaa in lines 30 and 40. If CHDUMP is the first .BA file in memory, then aaaaa = 32768 (32K machine) or 40960 (24K machine). If CHDUMP isn't the first .BA file, use CHANGE.BA (see article text) to find the starting address. (Note: The value of X is only from 200 to 250, since this is the region of the program that contains the printer codes.)

to the relative address. (If you have 24K or RAM, add 40960 instead.)

This concept can be used if you change printers frequently and need to alter commands to match equipment. I find that I regularly change the left margin as applications dictate. I also change the print density to allow me a "draft" mode, which helps to save ink cartridges and prints a little faster.

A few cautions should be mentioned to avoid visiting the colder climates, i.e., to prevent cold starts. (I've donned my warm coat more than once while exploring this, so pay attention!) First, do not *POKE* while *CHDUMP* is activated. Second, *CHDUMP* does not seem to take kindly to a left margin of zero. Third, consult your printer's manual to be sure you are telling it something it will recognize. Finally, always *PEEK* before you *POKE*, to be sure you are where you think you are. Missing the address, even by one, is "chilling." I have performed these *POKE*s with no ill effects, but you may find something that I haven't. Happy *POKE*'ing!



DEFUSR appears monthly to answer your questions about Tandy notebook computers.

*Send your queries to: DEFUSR, PORTABLE 100,
P.O. Box 428, Peterborough, NH 03458-0428.*

Please enclose a stamped, self-addressed envelope for our reply.

SAFARI 100!

I recently returned to using my Model 100 (I bought my first one early in 1984) after buying a desktop several months ago. I find it very difficult to sit down in one place to work all the time. I also have a Model 600 which I used exclusively for a year, because I found its built-in disk drive handier than the Model 100's disk drive.

However, I do have problems occasionally, and living on the west coast of Africa does not make it easy to solve them. First, the LCD on my Model 100 begins fading after about a half hour's use. Can it be repaired? If so, how much will it cost? Because I use the machine primarily for word processing, should I simply scrap it and buy a WP-2 or something like the Toshiba 1000?

Second, my Model 600's archiving capability is very capricious. In a recent effort to prepare a rather long paper written by a friend on the machine, we divided the thing up into smaller documents and put them on diskette. Now about half the documents are unreclaimable. When we try to copy them from diskette to RAM, we get a message saying *Incomplete* after much grinding of the machine. Is there any way to retrieve these documents? For this particular situation we'll end up retying them, but I should know for the future. Do you have any programs or resource person who can help me?

**Robert J. Palmeri
USIS Dakar**

There is no repair for a malfunctioning LCD; it must be replaced. The cost in the USA is \$211.07. Before you replace it, though, I have a question: Where are you using the computer? I know that my Model 100 screen tends to darken and slowly fade out when I'm outside in the hot sun. After an

hour, it's almost impossible to read. Inside, I have to occasionally adjust the display with the contrast control, but it never dims enough to cause me any problems. The problem is definitely heat-related.

If you decide against replacing the LCD, you'll find the WP-2 a good choice as a word processing workhorse. I strongly recommend against using a single-drive MS-DOS machine. While there are some wonderful MS-DOS programs for writers (Right-Writer, Corporate Voice, A&P Style-

that occurs to me is to suggest checking the disk drive itself. After this much time, it's possible that the drive is failing and either the electronics aren't as good as they used to be, or the drive head itself is not writing or reading properly. Fortunately, 3.5-inch disk drives are fairly cheap (under \$75 in the USA). If you have access to a computer technician, ask if he can test the drive and tell you if that's the problem.

As far as programs are concerned, I'm sorry, but we can't help you there. No one at the office knows of a disk-editing program that does what you need. (Can anyone else offer a suggestion?)

-fk

How can I get around this heinous mismatch?

book, etc.), all are disk-space hungry. You will find it difficult, or even impossible, to get some of these ancillary programs to fit on a single drive, much less do anything useful to your documents.

In fact, finding a good, reliable word processor that will run on a single-drive MS-DOS computer can be quite challenging (see last issue for a review of WordStar Laptop Collection, a powerful word processor that works on a single-drive system). And if you don't have the space for all those wordsmith utilities, it negates the advantages offered by the MS-DOS world.

As for your Model 600, the first thing

CHARACTERS, DOS, & ZEN

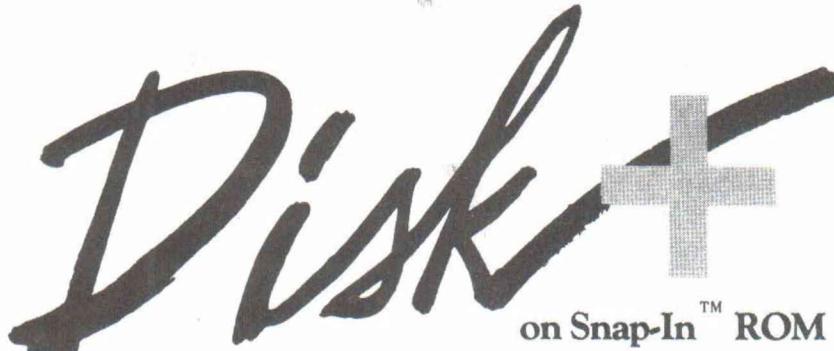
If I write a document in Spanish, I want to be able to take advantage of the Model 100's foreign characters produced with the CODE key. However, these characters have different ASCII values than my printer. How can I get around this heinous mismatch? Is there some way to re-map the values so the printer prints what I see on my screen?

Is there a backup program that will back up the memory of the Model 100 or Model 200 to the Portable Disk Drive?

Michael Daigle's IDEA BOX in the May '89 issue so influenced me that I'm wanting to sell my 12MHz 40MB 80286 and wing it with my Model 100. Yet the screen is too small for full-time use, so the Model 200 seems very attractive. However, I'd like to eventually increase the RAM past 72K, and it seems like all the new and cool RAM/ROM expansion products are only being made for the Model 100. As far as I'm aware, only Node makes a RAM expansion for the 200, and if I use it, I lose my precious option ROM socket for Super ROM or T-Word, not to mention having a big thing

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When we designed Disk+ we did it out of necessity. We wanted a way that we could just connect a Model 100 to our desktop computer with a cable and save files onto the desktop's disk drive. We wanted it to be so simple to use it would be self-explanatory.

Picture this. Disk+ comes to you on a Snap-in ROM and a diskette for your desktop. You take a quarter and open the little compartment on the back of your Model 100. Then you just press the ROM into the socket. Disk+ appears on your main menu just like a built-in.

You connect your Model 100 to your other computer using an RS232 cable (available from TMNE for only \$20).

You just place the Disk+ diskette into the desktop's drive and turn on the computer. It powers up automatically and says "awaiting command" on your desktop's screen. Then you just put the widebar cursor on the Model 100 main menu on Disk+ and press ENTER. You are shown your RAM files arranged just like the main menu.

To save a file to your other system's disk drive, you just move the widebar cursor to the file you want to save and press ENTER. It is saved instantly with no further action.

To look at the disk directory, you just press a function key on your Model 100. You see immediately the disk directory on your Model 100 screen, and it is arranged just like your Model 100's main menu.

To load a file from the diskette to your Model 100, you just move the widebar cursor to the file and press ENTER. The file is transferred to your Model 100's RAM instantly. You can press F8 and go back to the main menu, and the file you loaded from diskette is there, ready to use.

It is so nice to be able to keep your documents, programs (both BASIC and machine code) and Lucid spreadsheet files on the diskette, and bring them back when you need them. All files are ready to run or use with no changes or protocol by you.

If you have access to a desktop computer and don't have Disk+, then evidently we have done a poor job telling you about it.

All files and programs that you load or save, go over and come back exactly as they are supposed to be because of full error checking. This guaranteed integrity is really a comfort. Disk+ is wonderful in so many other ways. For example, you can do a "save all" of all your RAM files with just a touch of a function key. That group of files is saved on the diskette under a single filename with a .SD (for subdirectory) extension. Any time you want, you can bring back all those files at once, or just one or two if you like, again with one-button ease.

Disk+ takes up no RAM. That's zero bytes either for storing the program or for operating overhead.

What really excites most Disk+ users is text file cross compatibility. Your Model 100's text files are usable on your desktop computer, and your desktop's text files become Model 100 text files.

This means you can write something on your Model 100, and with Disk+ transfer it

instantly to your desktop and start using it right away on your bigger computer. Or the way we like to work is to type in a document on the desktop computer and then transfer it to our Model 100 with Disk+. Then we print out the document, beautifully formatted, using WRITE ROM.

Disk+ works with just about every micro sold, from IBM PC and its clones, to all Radio Shack computers (yes, all), to Apple II, Kaypro, Epson and most CPM. Just ask us. More than likely, your computer is supported.

Incidentally, hundreds of Model 100 owners have gone to their Radio Shack stores and bought a color computer because it is so low priced, and with Disk+ they have an inexpensive disk drive.

And if that weren't enough, how about this: Disk+ also provides cross-compatibility between different computers like IBM, Apple or the Model 4 using the Model 100 as the intermediary device. Quite a feature!

The snap-in ROM is really great because you can use other ROMs like Lucid or WRITE ROM. They snap in and out as easily as an Atari game cartridge and you never lose your files in RAM.

Anyone who ever uses Disk+ simply can't do without it. But so many times we have had new users call us and say, "Wow! I had no idea when I ordered it that Disk+ would be so fantastic. I just couldn't believe that I could use my desktop computer's disk drive with my Model 100 just like it is another main menu."

That's why we sell Disk+ on a thirty-day trial. If you aren't completely satisfied, return it within thirty days for a full refund. Priced at \$149.95 on Snap-in ROM. MasterCard, Visa or COD.

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sticking out of my portable. Do I bite the bullet and give up the huge screen of the Model 200 in exchange for the massive RAM options available only for the Model 100? Or do I take Michael Daigle's Zen-like mindset a step further and chuck everything out the window and use a manual typewriter?

**David Newcorn
San Diego, CA**

Sorry, David, but the character values in the Model 100 cannot be changed, just as the printer character values are unchangeable. The ASCII character set is defined only for the first 128 characters; the remainder are at the discretion of the hardware manufacturer. This is why most printers offer a variety of character sets (US, British, French, German, and Japanese are the most common). Microsoft decided the values assigned for the Model 100/102/200 character sets when they first designed the machine in 1981. This was before the introduction of the first IBM printer, which became a default "market standard." As a result, the foreign characters do not match.

A possible work-around would be to find the character values your printer uses and write them down. Then, after you finish your document, have a BASIC program scan your document and replace the Model 100 foreign characters with those used by your printer. Now, when you print the document, the proper characters appear on paper.

For PDD backup you have a couple of choices. Club 100 (see their ad on page 1) offers several Model 100/PDD DOS programs that can do what you want. Which one you buy depends on which disk drive you own: PDD-1 (100K) or PDD-2 (200K). If you have a PDD-1, you can even download a free PDD-DOS from the Club 100 BBS, the CompuServe M100SIG, or even the Portable 100 BBS.

The problem with the backups is that they all involve switching disks many times (the Model 100 32K memory limit, you know). Another alternative, if you have access to a desktop computer is DISK+, from Tri-Mike Network East (see their ad on page 30), which lets your Model 100 use the desktop computer's disk drives for storage. Practically any desktop will, because DISK+ supports MS-DOS, CP/M, Apple //, and many other computers. If you have access to a Macintosh, 100duet from Cabochon (1740 Massachusetts Ave., Boxborough, MA 01719, 508-264-4648) will do the job.

You could take Mike Daigle's mindset even further and go back to pencil and paper. But before you give up on the Model 200, check with Node. I think someone has developed a short .CO file you keep in RAM that removes the requirement for a ROM chip to drive their product.

-tk

1200 BAUD PACKET RADIO

I have been a fan of the Tandy 100/102 since they came out. I read in an October 1988 issue how to program TELCOM for an output of 450 baud—but for packet radio I need an output of 1200 baud so that I can send (broadcast) over the 2 meter FM amateur band. I saw mention of a small external modem called Worldport. Where can that be gotten? Are there any other options?

**Charlie Hudson
Cooperstown, NY**

There are many different versions of small 1200 bps modems on the market. Microcom, Practical Peripherals, Vocal, and US Robotics are just a few of the many manufacturers. Some require a battery/power adapter and some are designed to run from either the RS-232 port of your computer, the phone line, or both.

**A possible
work-around would
be to find the
character values
your printer uses
and write them down.**

But guess what, Charlie—as nice as the Worldport modems are (and I love mine) you don't need one, dude! What you need for packet is a TNC (terminal node controller). This device, as I told James Seago (INPUT/OUTPUT, June '91), has its own built-in modem. It connects to your Model T's RS-232C port, acting as a go-between, shuffling your data between the computer and the outside world at any standard baud rate.

Whole bunches of TNC's are available from various manufacturers, each with its own special features. Check current and back issues of 73 Amateur Radio Today (WGE Center, Forest Road, Hancock, NH 03449, phone 603-525-4201) for prices and availability. And while you're at it, tell 'em you want the December 1990 issue, so you can see me on the cover!

-MN



The Beginner's Guide to the WP-2

A 26-page booklet that tells you everything you need to know about the WP-2—what it can do, what it can't do, and how to use it with tape cassette, disk drive, and other computers. It even includes the cable instructions for connecting it to Macintosh and IBM-compatible computers! If you own a WP-2, or are thinking of buying one, then you must have this book! Order today!

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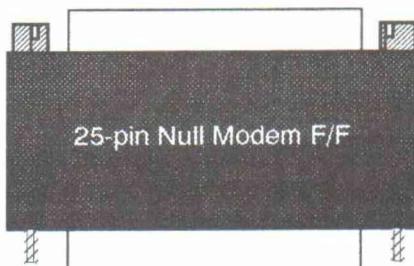
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COMPATIBILITY: All MS-DOS computers.

The New DeskMate: Version 3.05

DeskMate has some new improvements, new talents, and a new book.

by George Sherman

"**D**um dum de dum." Bzzzzzz! (Sound of vacuum cleaner running.) Oh, hi. I was just getting the place ready for our visit. You're early. Excuse me while I put this thing away. Have a seat and I'll be right with you. Okay, where did I put that book? Oh, here it is.

I said this month we would look at some of the changes in *DeskMate* in the current version 3.05. I am indebted for most of the factual information to Michael A. Banks and his latest version of the book, *Getting the Most Out of DeskMate 3, Second Edition*.

PACKAGING AND MANUALS

Let's begin with the package itself. The box in which *DeskMate 3.05* arrived is smaller by at least a fourth from previous packaging. Also the design on the box itself has been changed and to my eyes is much more pleasing. Surprisingly, there is no mention on either the box itself, nor the instructions within as to what version of *DeskMate* this is. Opening the box reveals three manuals with a cover design identical to that of the box. The smaller of the three is entitled, *DeskMate, On Your Mark, Installing DeskMate*. It is only a fifteen-page booklet which details the installation and/or upgrading procedures to get this version of *DeskMate* up and running. I was particularly interested in several comments about upgrading which proved to be true. Quoting from the manual now, "Besure you copy your old data files onto your working copy of the new *DeskMate* version ... If you transfer your data files from your old *DeskMate* diskettes to your new diskettes, you might not have enough room ..." (Note: Amen, brother, amen!) "...If you transfer your old *Address Book* data file to your new *DeskMate* diskettes, be sure you put

(the) file (*personal.adr*) on the same diskette as your new *Address Book* application (*address.pdm*) ... Rename your *personal.cal* file to *personal.cli* ..." (Now why in the heck did they do that?) "...using the *Rename* option on the desktop's *File Menu* (F2)."

The second manual enclosed is entitled, *DeskMate Getting Started*. This is the book that Tandy always includes in their software and which is written in lower elementary school level English, complete with cartoons for what Tandy assumes is the majority of the general population. (They may be right, you know.) This is for the individual who is completely computer illiterate and needs the most basic of instructions about the various features available with *DeskMate*.

The third manual is the one with all the pertinent information for the average computer literate *DeskMate* user and is entitled, *DeskMate User's Reference*. This 191-page manual is chock full of interesting and helpful information and is a very necessary reference guide which should be kept close at hand when using *DeskMate*. I make this latter statement in spite of the excellent on-screen help Tandy provides and has provided since version 3.03.01. This on-screen help is memory intensive, however. If you have plenty of space on your hard drive, by all means load it up and have it available. If on the other hand you are operating as I am with limited RAM and even more limited diskette space, delete all the help files and use the reference manual. In one of my earlier articles I alluded to this available on-screen help and tutoring. I said it then and I'll say it again, it is very well laid out. The progression through the various screens is understandable and instructive. It's almost like having a Tandy expert sitting at your elbow to

help you understand what is happening and what you need to do next. As I say, if you have room for it on your hard drive, by all means use it. Even with my limited space I have relevant portions of it available for instant use.

Underneath the manuals is some advertisement, a disclaimer, and your registration card. Finally you get to what you were looking for all the time: the diskettes. The software comes on nine—yes, I said nine—5.25-inch diskettes or five 3.5-inch diskettes. A word of caution here. The set of diskettes I received from Tandy were mislabeled. In other words, what the printed label on the diskette said was on the disk was not necessarily what was there. Put the diskettes in your machine and read the directories to make sure you know where everything is, and then redo your labels if you wish. I didn't worry too much about what Tandy said was there. I backed everything up to working disks and made up my own labels for them.

SOFTWARE CHANGES

Here is a list of the pertinent changes in the newest version. "A new *Clipboard* that allows you to store its data on disk, and displays filing and other options as well as file lists and data stored on the *Clipboard*." Hey, gang, this one's real neat. No longer is there a RAM limitation. Now when you call up *Clipboard* you get a list of files menu. More on this later. "A 'clean' work screen for *Draw* with the tool icons at the left-hand side removed (all tools are selected via a new menu)." I must confess—I have NEVER even TRIED to use *Draw*. I can't draw a straight line using a ruler. But our illustrious publisher keeps prodding me and I will have an upcoming article on my attempts at using *Draw*, plus a review of an absolutely fantabulous add-on called

Print Magic that could make Rembrandts of us all. "New graphics during PC-Link sign on." "A new 'screen saver' accessory that can be set to blank your screen if there is no keyboard or other input for a specified period." "You can now start *DeskMate* from DOS with an application and a data file for the application to open a specified file on the command line." It also has a number of additional printer drivers. And the addition of a number of new modem choices, including a Fast Hayes modem, will enhance the use of the Hayes-compatible modems.

There have been some minor yet noteworthy changes in the *Change Directory* feature and the *Format* options. The *Change Directory* feature now includes a new *LOOK* option which allows the user to view a list of subdirectories within a directory. This does not permanently change the directory. The new *Format Disk* dialog box allows the user to specify the drive to be formatted, whether or not the operating system is to be installed, and the size and density of the disk.

"Address Book's *File* menu (F2) now has a handy option called *Print address*... The *Print address*... option prints the currently displayed address to a printer or a disk file. If you're using a graphics printer, *Address Book* will print address card(s) using the graphics you see on-screen with the address cards." Individual addressees can now be members of up to 25 different lists.

CALENDAR

Major changes in *Calendar* consist of changing some command or accelerator keys to make it consistent with other *DeskMate* structure. Also the number of annual events (events which automatically pop up each year without having to be reentered), has been expanded to 140. And as previously mentioned, the suffix of the *Calendar* data file has been changed, for some unexplainable reason, from *.CAL* to *.CLN*.

TEXT

The changes in *Text* consist of increasing the print width from 132 to 160 and saving as an attribute the status of a picture in your text, so it appears the same way the next time you load the document.

CLIPBOARD

Let me do a more thorough presentation of the changes in *Clipboard* here. "The *Clipboard* accessory can be displayed in *DeskMate* 3.05—and it can store and retrieve data written to it from an application. However, information placed on the *Clipboard* cannot be dis-

played on the *Clipboard* itself. What *Clipboard* does display is the name or names of items you have stored on it." Let me explain. First, "to place information on the *Clipboard*, use the same procedures as with earlier versions of *DeskMate*." Second, you can paste information currently on the *Clipboard* into an open file by selecting *Paste*. Information placed on the *Clipboard* will remain there (invisible) until you clear the *Clipboard* or replace it by placing other information on it. Caution: Cut or copied information replaces any information that might already be on

it is now possible to have multiple *Clipboard* files, one for each application, on a floppy disk-based system such as mine.

"To recall a specific named item, highlight it using the arrow keys or the mouse, select *COPY*. The item will become the current *Clipboard* information, replacing any information that might be on the *Clipboard*." This information can then be pasted into a document through the normal procedures. It is also possible to clear an individually named file from *CLIPBOARD.DAT* without killing the entire file. As I said previously, information stored on the clipboard, or recalled from *CLIPBOARD.DAT* cannot be viewed on the *Clipboard* itself. This has been true since *DeskMate* version 3.3. If you really need to see what is on the *Clipboard*, or in one of the named files in *CLIPBOARD.DAT*, activate *TEXT*. Then using the *Paste* feature insert the information into your document. After you have viewed it, you can delete it if it is not pertinent to the current document.

HANDLING INCREASED RAM

If a hard disk, DOS 3.3 or higher, and an XMS driver is available, *DeskMate* 3.05 supports both LIMM (also known as LIM memory or EMS) and shadow RAM expanded memory.

Although the size of the various *DeskMate* programs and related files are getting larger, Tandy is making every effort to make *DeskMate* a very good piece of graphic user interface software that is worthy of consideration. As there is in any market, there does exist other software which competes with *DeskMate* and in some instances is faster in operation. However it is worthwhile to note that many of the major commercial software developers market a version of their product which is compatible with the *DeskMate* environment. I would think that this should speak for itself.

NOTE: Unless otherwise stated, all quotes contained in this and future articles are from the following books:

Getting the Most Out of DeskMate 3, Second Edition. Michael A. Banks. 1989. A Brady book. Simon & Schuster, Inc., 15 Columbus Circle, New York, NY 10023.

The First Book of DeskMate. Jack Nimmersheim. 1990. Howard W. Sams & Company, Macmillan Computer Book Publishing Division.

BY GEORGE!

You can contact George on CompuServe (ID 72300,3203) or by mail, either c/o Portable 100 or directly at 1701 Clarke Street, Ponca City, OK 74601. (Please enclose SASE if requesting a reply.)

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the *Clipboard*, whether the information has been saved or not. However, information that is currently on the *Clipboard* can be saved as a named item.

"To save the information currently on the *Clipboard*, select *SAVE*. You'll be prompted to enter a name for the information; do so, and the information will be saved in the file *CLIPBOARD.DAT*. (Note that all named items are saved in the same file. However, each piece of information that you've copied or cut to the *Clipboard* and saved will be assigned a different name (within that file).)" Thus



COMPATIBILITY: WP-2.

Big Iron Connectivity: Remote Computer Communications

Make your WP-2 talk to other computers and on-line services.

by Stan Wong

Computer and electronic technology is advancing at an ever increasing pace. I, however, am spiraling down the technology path. I have a 386 computer sitting on my desk at home, but I've been relying more and more on my WP-2 to get my work done. The WP-2 by itself isn't of much use to me. The saying that no man is an island is true of computers also. Used properly with my other machines the WP-2 is a productivity multiplier.

Not so many years ago the term "big iron" referred to the mainframe computers that used to fill large air-conditioned rooms that were tended to by subservient workers. Optimizing the efficiency of the computer, not the user, was the main concern. Users paid homage to the Big Iron gods in specially prepared temples also known as computer rooms.

This month I'm starting a series on Big Iron connectivity. As noted theoretical physicist Al Einstein might have once said, "Everything's relative." These days, a desktop PC is big iron compared to the WP-2.

The WP-2 has many of the telecommunication features of its desktop brethren. And all of this capability is built in, too. There's no need to buy additional software.

The WP-2 can communicate with another computer either by direct connection, via cable, to another computer sitting next to it; or with a remote computer via modem. This month I'll focus on communicating with a remote computer via modem. Such a computer will

be typically larger than the run-of-the-mill PC. A remote system may be a "for-pay" service such as CompuServe or GENie, or it may be a BBS, such as our own *Portable 100 BBS*. Or it may even be your office computer.

PARDON ME, MODEM

To start, you'll need a modem. If you own a desktop computer you may already have what you need. You'll need the external variety, one that sits outside the computer rather than inside. Modems come in all sizes, varieties, and prices. A suitable one for the WP-2 would be a transportable one that fits the small/lightweight/mobile ethic of the WP-2. Pocket modems are ideal for the

as useful in your telecommunications toolbox as books and manuals on the subject. All this means that I can only generalize and wave my arms in an attempt to help you set your modem up.

CONNECT YOUR MODEM

If you are using an external modem from your desktop machine, chances are that modem is already properly configured. What you will probably need is a 25-pin/9-pin adapter. If your modem connector is of the socket (female) persuasion, then you will need an adapter with a 25-pin male end and a 9-pin female connector on the other end.

Make sure that the modem power is on, the cables connected, and the modem

plugged into the phone line. I'm embarrassed to admit how many times I've spent debugging modem, computer, and software, only to discover that I failed to connect the modem to the phone line.

HEY, DUMMY!

I'll describe how to connect the WP-2 to a remote computer in the "dumb terminal" mode. In days gone by, the user used what was essentially a monitor and a keyboard. All the intelligence was contained in the host computer.

Next month I'll describe how to use the WP-2's native intelligence to make it do more than its dumb brethren.

SETUP, SETUP, SETUP

There is a saying that the key to any successful business is "location, location, location." A similar axiom applies to WP-2 telecommunications. You have to tell the WP-2 the characteristics of the

Device	:RS232C MODEM
Baud Rate	:75 110 150 300 600 1200 2400 4800 9600
Word length(bits)	:5 6 7 8
Parity	:None Even Odd Ignore
Stop bits	:1 1.5 2
XON/XOFF	:Enable Disable
Printer echo	:ON OFF
Duplex	:Half Full

Figure 1. The Telcom Setup menu lets you match your WP-2's communications settings to those of the remote computer.

WP-2. Make sure you try the modem before you purchase it, or at least be sure that you can return it for a refund. The Practical Peripherals modem (reviewed in this issue) seems to have the ideal specs, but it doesn't work with the WP-2.

I'VE GOT CONNECTIONS

The WP-2 manual has a great line: "Be sure that you properly connect the modem to your WP-2 before you proceed." Yeah, terrific. Ninety-percent of telecommunications is black-art. Finding the correct settings is not a matter of science or procedure. It's trial and error and blind luck. Four-leaf clovers are just

communication session. That means—you guessed it—a telcom setup menu. In three parts.

The Telcom Setup menu is accessed outside of the Telcom module. You do this by selecting the Setup menu (F2--). Position the highlight bar with the arrow keys over Telcom and press Enter. You'll see the menu shown in Figure 1.

The first selection is the type of device you're going to use to communicate with. In the case of a remote computer the device is MODEM. (In a later installment, I'll discuss, communicating with a local computer through a cable—the RS-232C setting applies to that situation.)

Computers communicate with each other using a variety of different codes. The WP-2 is flexible enough to accommodate 99-percent of these, but you have to know the parameters of the remote system. If you don't know, ask the system administrator.

The next selection you need to make is the baud rate. Choose the maximum rate that your modem and remote system will accept. Typically this will be 2400 bps. The higher the baud rate the faster the systems can transfer information. One caution: For-pay services like CompuServe sometimes charge more for the privilege of using higher baud rates. If you are transferring files, the higher baud rate is most often more economical. In dumb terminal mode, the 300 bps or 1200 bps rate might be cheaper, since there's a limit to how fast you can type and how fast you can read the information coming across the screen.

The next three selections involve the bits-per-character, parity, and stop bits. Most systems use 8 bits, no parity, and one stop bit, commonly designated 8N1. Some services like CompuServe and MCI Mail use 7 bits, even parity, and one stop bit, or 7E1. I won't go into the deep meaning of these parameters, but if you don't know what to use, try 8N1, and if that doesn't work, try 7E1. And if neither works, call the remote service system administrator.

XON/XOFF is a computer-to-computer flow of information control signal. If the WP-2 is receiving information too quickly from the remote system, it can order the remote system to halt by sending an XOFF signal. When the WP-2 is ready to process more data, it can send an XON signal to the remote system. Many systems use this, so turn it on and see what happens.

The Printer Echo option lets you capture your terminal session to a printer. The WP-2 has no (built-in) way to log a session to memory. Naturally, you must have a printer connected and on-line for

this to work. Lots of paper would be a good idea, too.

The Duplex option is also known as "local echo." On most remote systems, such as CompuServe, whenever you press a key, the host sends the same keystroke back to your machine to be displayed on the screen. This is called "full duplex." "Half duplex," (local echo) is when the remote system, such as GEnie, does not send the keystroke back, meaning that the WP-2 must supply its own character to the screen.

If you don't know which setting to use, assume full duplex. If what you type doesn't appear on the screen, switch to half duplex.

TELCOM II—THE SEQUEL

At this point we've gone through only one-third of the setup. Use the PgDn key to access the second third.

You can ignore the Transfer option for now. You won't need it in the dumb-terminal mode.

The Incoming CR and Outgoing CR options can be very important in your communications session. Different systems use one of two different means of signaling the end of a line of text. Many systems use a carriage return (CR) character followed by a line feed (LF) character (denoted CRLF). Some use only a CR.

For example, if the data that you are receiving keeps overwriting itself, you'll need to set the Incoming CR to CRLF. The data is being overwritten because there is only a CR in the incoming data to mark the end of a line. You need to have the WP-2 add a LF character every time it sees a CR. A little bit of thought and experimentation are the rules of the day.

Set Mode to Originate and forget it.

Ignore the Dial number and LogOn sequence options for now.

TELCOM SETUP III— YET ANOTHER SEQUEL

Like a successful movie, there's more to this story than we've already seen.

Dvorak Keyboard System

Give your laptop the Rolls-Royce of keyboard systems. The Dvorak key arrangement eliminates wasted motion, reducing finger travel by more than 90%. Type faster and more accurately. There's less error, less fatigue. And learning to type is much easier on a Dvorak keyboard. No hardware! Uses less than 500 bytes of RAM. Works in BASIC, TEXT, TELCOM, etc., just like it came from the factory that way! (Tandy 100, 102, 200 and NEC-8201) \$36.95—Portable Disk Drive Disk. \$39.95—Standard Tape Cassette.

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TMN Assembler

from Tri-Mike Network East

This assembler requires less than 3K RAM and is relocatable. It assembles source code from any file or device; accepts data in hex, decimal, or ASCII; creates a ready-to-run .CO file directly on the Menu or an optional trial assembly. Six built-in macros make programming even easier. Output all or any portion of the assembled listing to screen or printer, with optional user-inserted pauses. Manual includes extensive RAM and ROM maps! (Model 100/102, 200, NEC 8201/8300) \$36.95—Portable Disk Drive Disk. Standard Tape Cassette—\$39.95

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Press the PgDn key to access the third, and last, Telcom setup menu.

If you're using a Hayes-compatible modem, set the first three parameters thusly (trust me):

Initialize Modem: ATZ

Dial sequence: ATDT

Terminated code: OD

Ignore the other parameters for now. Press PgUp to check the previous screens of information. Pressing Enter will take you back to where you were when you entered the WP-2 Setup menu.

WINDING DOWN

I've only gotten as far as how to configure your WP-2 to communicate with a remote computer. We've just been preparing to communicate. Next month, we'll use the phone system to reach out and touch someone (the remote system, that is).

This is your column. I want you to help define the "yellow brick road" for me to follow. Fire up your WP-2 and send me a letter in care of Portable 100 or directly at P.O. Box 28181, Santa Ana, CA 92799-8181. If you prefer the electronic medium, use GEnie address STAN.WONG, CompuServe address 70346,1267, or Internet address dasun!wongs@Sunkist.West.Sun.Com.

COMPATIBILITY: Model 100, 102, and 200.

It's A Bird, It's A Plane, It's ...

Transform your mild-mannered Model T into a powerful force for Truth, Justice, and The American Way.

by Mike Nugent

Faster than a speeding BASIC program, more powerful than a 4-bit processor, able to format long documents in a single pass, it's ... SUPER HERO!

Here's a brand new column devoted to users of *Super ROM*, *Write ROM*, *Lucid ROM*, and other products produced or distributed by Tri-Mike Network East. Each installment, I'll share hints, tips, solutions to problems, and ideas generated by readers (or my own x-ray vision) to help us get more from our Model T's—and sometimes PC's as they relate to our Model T's.

I said "readers" above, because many of you have already encountered special situations, problems, or needs, and may have come up with solutions. Perhaps you've developed a useful spreadsheet or spreadsheet technique, an interesting way to make *Write ROM* produce special printer effects, a helpful hint for using the *Thought* outliner, etc. On the other hand, perhaps you're still having trouble achieving a desired result or have a question about something that's not clear in the manuals. Whatever the case, I'd like your input. Share your ideas, thoughts, magic, and questions, and we'll use SUPER HERO to help us get the best from *Super ROM* and related products.

Let's start with something easy, and I'll watch my mail to see what innovations you can add. For example ...

LUCID-TO-TEXT

If you're not yet aware, any cell in a *Lucid* spreadsheet (*Super ROM* version only, not the stand-alone *Lucid ROM*) can contain a complete text (.DO) file. Though cells don't really "contain" text files, they act that way, letting you create

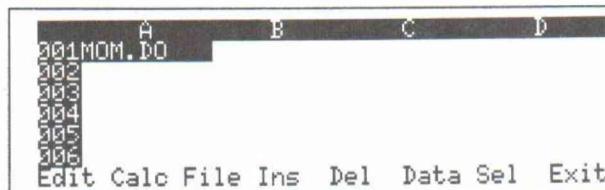


Figure 1. Typing a .DO filename into a Lucid cell lets you create and/or access that file.

and/or access them, even though they actually exist as separate, normal .DO files on the Model T main menu. It's a very handy feature. To see what I mean, first create a spreadsheet, such as in Figure 1.

If you've never created a *Lucid* spreadsheet, don't worry—it's easy. Select *Super* from the Model T's main menu. Then choose *Lucid* (F1) from *Super ROM*'s menu, type in a filename (up to six characters long) for your spreadsheet, and press *ENTER*. Your new spreadsheet appears, with the dark cursor bar on cell A1.

Once in your spreadsheet, type a valid .DO filename—*MOM.DO* in our example (upper or lower case; it makes no difference)—into cell A1 and press *ENTER*. At this point you simply have a filename in a cell, nothing more.

Now press F6 (Data). You'll see a new set of function key labels on the bottom of the screen (Figure 2). Pressing F6 again (Text) creates and opens *MOM.DO*, putting the cursor at the beginning of the file. (Had *MOM.DO* already existed, it would

simply be opened.) Now you're in *TEXT* and can do anything you'd normally do in a .DO file—type in text, edit, cut and paste, whatever. Go ahead and try it. Write a letter to your mom (ain't it about time?) telling her how smart you're becoming, computer-wise. (See Figure 3.)

Now here's the neat part. After telling Mom what a great job she did raising you, press F8 (Exit) to exit the file and—presto!—you're right back in the spread-

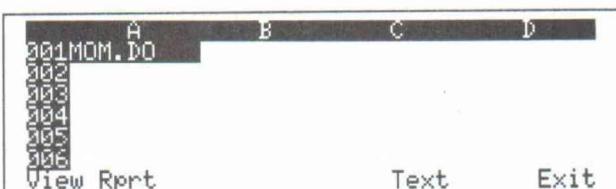


Figure 2. Pressing F6 (Data) takes you to this menu, where another press of F6 (Text) takes you into the text (.DO) file.

sheet with the cursor on the *MOM.DO* filename. Anytime you want to edit *MOM.DO* some more, put the cursor on that cell, press F6 twice and type away. You could even print it out using *SHIFT-PRINT*, but as a *Super ROM* owner you'd surely rather impress Mom by using *Write ROM* to format it with margins, a

Dear Mom,
How's it been going? I've been writing an article for P100, and your name came up. Well, not as "Ruth," but at least as "Mom." So you're famous!
Now, remember that \$40,000 you owe me? Guido promised to stop by and "check on your health." Nice of him.
+

Figure 3. Once in your text file, you can type, edit, or even print it. Then press F8 (Exit) and you'll be instantly back in your Lucid spreadsheet.

SUPER HERO

A	B	C
301.MOM.DO	Overdue letter to Mom	
302.TTDTT.DO	Things To Do This Thursday	
303.note.do	Misc. junk, lower case OK	
304.P2ES\$.DO	Plan to embezzle P100 subs	
305.LONGNM.DO	filename runs into comment	
306.	Plan to embezzle P100 subscription \$	

Figure 4. You can use Lucid's TEXT access feature to make a commented catalog of your .DO files. To enter any file, cursor over its name and press F6 twice.

letterhead, headers, footers, page numbers, etc. (More on that next time.)

Can you think of other uses for this feature? I can. For instance, my daily publisher-type lifestyle consists of frequent interruptions. (Grr!) So when working on a spreadsheet, I create a "doorway" into my NOTE.DO file by typing NOTE.DO into a convenient cell, usually A1 since it's easy to access quickly. When the inevitable occurs I press CTRL-W (goes immediately to cell A1), F6 twice to enter NOTE.DO, then type or read the necessary info, and press F8 to return to my spreadsheet—to continue calculating how much more I'd earn as a rock star.

In effect, I have a sort of "pop-up" note file while working on spreadsheets. But there are more uses.

FILE CATALOG

IDEA BOX columnist Michael "Sorry About Your Goat, Dude" Daigle has suggested using this TEXT access feature to make a commented catalog of your .DO files, something like that shown in Figure 4.

Column A "contains" your files, and column B contains comments or descriptions for each. No need to scratch your head and wonder what you meant when you named a file TTDTT.DO in cell A2—the comment in cell B2 reminds you that it means *Things To Do This Thursday*. When Thursday comes, put the cursor on TTDTT.DO, punch F6 twice, and then read, revise—or even ignore if you're so inclined—the chores you'd scheduled for yourself.

Want to add a new file to your catalog? Type its name in cell A6 (in our example), press F6 twice, and it's created. Type away to your heart's content. When done, press F8, returning you to cell A6, then cursor over to B6 to add a comment if you wish.

Some comments may not fit completely on the screen, as in row 4 of the example. To see it all, put the cursor on B4, press / (or the LABEL key) to see the full description on the

bottom line (the "edit" line) of the screen (Figure 5).

Don't like the way LONGNM.DO in cell A5 runs into its comment? Just widen column A. Put the cursor on any cell in column A and press F7 (Sel). The edit line will display A5:A5 (or the location of whichever cell the cursor is on).

Press ENTER and you'll see a new set of function key labels. Press F2 (Wdth), and in response to the Width? prompt type 10 and press ENTER. Column A is now 10 characters wide, accommodating the longest filename plus a trailing space, as in Figure 6.

If you later kill a file, its name will still be in the spreadsheet. To delete it, simply delete the entire row. Put the cursor on

When working on a spreadsheet, I create a "doorway" into my NOTE.DO file.

any cell within that row, press F5 (Del), then F1 (Row), and finally, press ENTER when the range is displayed. Alternatively, you can just erase the cells in that row by entering a space in each pertinent cell. For example, to erase MOM.DO, go to cell A1, press the spacebar and then ENTER. Likewise in cell B2 to erase the comment. You can now use the empty row to enter a new file if you wish.

Want your file catalog sorted alphabetically? No problem. The *Super ROM* version of *Lucid* has a two-level sort function built in; see your manual for details. (While the stand-alone *Lucid*

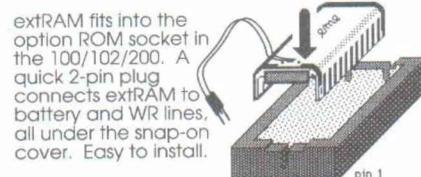
A	B	C	D
301.MOM.DO	Overdue letter to Mom		
302.TTDTT.DO	Things To Do This Thursday		
303.note.do	Misc. junk, lower case OK		
304.P2ES\$.DO	Plan to embezzle P100 subs		
305.LONGNM.DO	filename runs into comment		
306.	Plan to embezzle P100 subscription \$		

Figure 5. Too-long comments will appear in full on the edit line. Just cursor to the comment cell and press the / key or LABEL key.



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ROM has no direct *TEXT* access, the *Lucid Utilities* package does provide it with a sort function and other useful capabilities. Contact TMN East for more info.)

IMPORT/EXPORT DATA

Another use for *Lucid's* *TEXT* access feature is to keep notes about a particular cell or about the entire spreadsheet. I'll occasionally have a *.DO* file containing figures I need for my spreadsheet. By creating a cell with that file's name, I can refer to it easily for necessary info without leaving my spreadsheet. Plus I can copy text from the *.DO* file and paste it directly into the spreadsheet. When the spreadsheet is complete, I delete the no longer needed filename from its cell.

I can also do the reverse. If I want to save certain parts of the spreadsheet to a *.DO* file, I just select and copy what I want, go to my filename cell (or create one), enter the file *.DO* file, and paste the data in.

Lucid's *TEXT* access has often come in handy for me. I'm sure you'll find even more applications. When you do, please fire up *TEXT* (through *Lucid*, naturally) and drop me a line, so I can share your wizardry with others.

NEXT TIME

While you're at it, finish that letter to Mom. Next time around, I'll show you how to use *Write ROM* to create your own custom letterhead and make it print right along with your formatted letter, all in one step. Mom will be so impressed!

A	B	C	D
001MOM.DO	Overdue letter to Mom		
002ITDTT.DO	Things To Do This Thursday		
003note.do	Misc. junk, lower case OK		
004P2ES\$.DO	Plan to embezzle \$100 subsc		
005LONGNM.DO	Filename runs into comment		
006			
	Edit Calc File Ins Del Data Sel Exit		

Figure 6. For a neater appearance, column A has been widened to accommodate the longest filename plus a space.

S3-20, and the Super ROM Addendum supplied with the manual.

Enhancements include improvements in screen handling, global formatting, cut and paste functions, and cursor control. Added features include eleven new math operators, Boolean logic functions, find, sort, and *TEXT* access capability.

Owners of *Lucid ROM* and *Write ROM* (and even competitors' multi-function ROM products) can upgrade to Super ROM at special discount prices. For more information contact Tri-Mike Network East, P.O. Box 372, Peterborough, NH 03458. Telephone (603)924-8663 [924-TMNE].

The *Super ROM*
version of *Lucid*
has a two-level sort
function built in.

For details of enhancements to the Super ROM version of *Lucid* over the stand-alone *Lucid ROM*, see your Super ROM manual, pages C-1, S1-2 through S1-5, S3-3 through



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Further, LUCID® has what no other spreadsheet has: Cut, Copy, and Paste. It uses the same keys as Cut and Paste in TEXT, but here's the difference: it takes all the formulas with it when you paste and they all automatically recalculate with the entire sheet.

And here is what is really amazing. You can copy or cut from one spreadsheet and paste into another spreadsheet or even a TEXT file.

LUCID® supports all BASIC math functions as well as Log, sine, cosine, tangent, exponentiation and other sophisticated math functions.

LUCID® has so many features that you will say "this is what I need in a spreadsheet"; such as automatic prompting of an incorrectly typed-in formula showing just where the mistake was made.

LUCID® has expanded "go to" functions that remember and produce a windowing capability.

But perhaps most remarkable is that LUCID® is not only a spreadsheet but a program generator as well. First, LUCID® lets you protect all cells against entry or change, and then unprotect just the cells you want for someone else to use as input fields.

LUCID® will not only process values, but text input as well so that the facts other than numbers can be responded to. LUCID® has the ability for you to refer in a formula to cells containing words. This feature combines with the capacity of doing "if then" statements that work by doing table lookups against even massive X/Y charts of text or numerical information. You can produce a program that responds to inputs with no programming knowledge whatsoever.

You can prepare a report section in your spreadsheet with instructions to your user for printout, and they can produce a personalized printout that responds to their input. All your formulas and tables that did the calculations and provided the facts are invisible to that user. LUCID® is useful for doctors for patient questionnaires, troubleshooting technicians, purchase clerks, people doing job quotes, stores for customer workups, insurance agents and anybody who needs to process specific facts and numbers to produce a report based on those responses.

LUCID® comes with a manual that explains not only the characteristics of LUCID®, but will train you how to use a spreadsheet even if you have never seen one before. You are shown how to do budgets, forecasts, breakeven analysis amortizations and many other types of personal and business reports and calculations.

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Bringing It All Home Again

Gene reviews PC-PDD, the file management utility.

by Gene Wilburn

One of the handiest add-on products for the Model T is the Tandy Portable Disk Drive. It comes in two models: the original, called the Portable Disk Drive, or PDD-1, and a later model called the Portable Disk Drive 2, or PDD-2. The PDD-1 holds 100K and the PDD-2 holds 200K of Model 100/102/200 files. The PDD-1 is no longer sold, but can often be picked up second hand. The PDD-2, still in the Radio Shack catalog, works with the Tandy Model T's as well as the Tandy WP-2.

Versatile little units, these battery-powered drives are a perfect match for your portable. They can be taken anywhere, and they give you the comfort of knowing your files are backed up. My traveling gear is usually a Model T or WP-2, plus a PDD-2. I move the files to my PC or Mac when I get back home.

The problem with the PDD's is that there are three different and distinct types of formatted disks—PDD-1, PDD-2, and PDD-2 (WP-2). Until recently, there was no single DOS utility that could read and transfer files between a PDD and a PC directly utilizing all three formats. That has now changed as our intrepid WP-2 columnist, Stan Wong, has emerged from his software lab with a new product distributed by MicroMime.

PC-PDD, the new utility from MicroMime, transfers files between Tandy portable disk drives (PDD-1 and PDD-2) and IBM PC's and compatibles. Similar to the venerable *LapDOS* from Traveling Software (distributed by Club 100), *PC-PDD* lets you attach a PDD directly to your PC for file transfer and file management.

PC-PDD is no mere *LapDOS* clone, however. It has more, and newer, features. It is the only DOS transfer utility

that can also read PDD-2 disks formatted by the WP-2.

GETTING STARTED

PC-PDD is shipped on both 5.25-inch and 3.5-inch disks. The utility requires special installation via an *INSTALL* program on the master disk. In addition to creating a DOS directory, this procedure installs the files, and sets the system profile. *PC-PDD* will not operate if you simply copy the files to DOS.

You are required to add *COMSPEC=C:.COM* to your *CONFIG.SYS* file as well as adding a *PATH* statement for the PC-

you're having difficulty getting the program to read your drive.

Once the connection is established, *PC-PDD* displays a split screen that shows your current PC directory on the left and your PDD directory on the right. A menu bar above the directory screens displays the available commands. The overall look is similar to *LapDOS*. It has the same "point-and-click" orientation. Most commands are invoked by typing the first character in their names, such as *H* for *Help*, *W* for *Window*, etc. Files to be copied, renamed, deleted, viewed, or edited are selected by highlighting them with a cursor bar. The cursor bar is moved from file to file with cursor keys. Very simple and easy.

MAJOR FEATURES

At heart, *PC-PDD* is a two-way file transfer utility. It offers two transfer options: *Xfer* and *Copy*. *Xfer* is for binary transfer. It moves a file from a PDD to a PC and back with no changes to the internal file structure. *Xfer* mode is ideal for backing up binary files such as Model T .CO files and WP-2 .DO files.

The *Copy* command, which is intended for text files, translates the line endings of a PDD file to the line endings of your choice on a PC. The default is CRLF. For WP-2 .DO files, *Copy* strips the 128-byte binary header from the file, adds LF's to the CR's, and strips trailing characters from the end of the file. The result, provided you have not embedded any WP-2 attributes such as boldface or underscore, is a clean ASCII translation that can be fed to PC word processors.

In addition to transferring files, *PC-PDD* allows you to view them. This is especially handy as time goes by and you can't remember what's in a file. The *View* command is much more elegant than the one in *LapDOS*. It functions more like

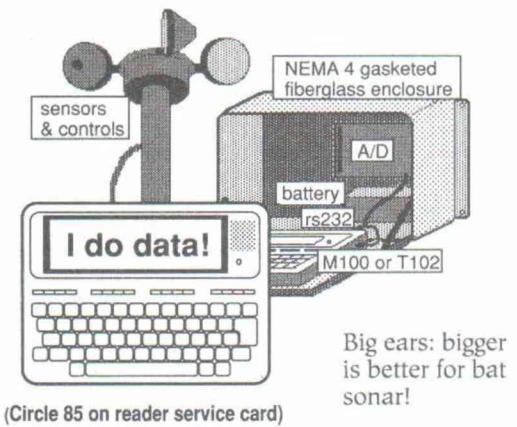
Xfer is ideal for backing up binary files like Model T .CO files and WP-2 .DO files.

PDD DOS directory in your *AUTOEXEC.BAT* file—e.g., *PATH=C:*. Once these preliminaries are complete, you can reboot the system and use the utility.

Before you can invoke the program, you must have a PDD attached to your PC's serial port. *PC-PDD* will not operate unless the PDD is attached and turned on. As with *LapDOS*, *PC-PDD* operations can be affected by RFI and other interference from the computer itself. MicroMime suggests moving the PDD farther away from your PC if

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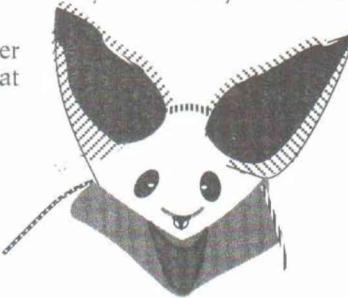
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MINOR FEATURES

I like the way MicroMime has designed the minor features of PC-PDD. For instance, the way you move from one directory window to another is with the *Window* command. This is more logical and consistent than the odd cursor-key movement of *LapDOS*.

In addition to the single-file *Copy* and

PRODUCT SPECIFICATIONS & SUPPLIERS

PC-PDD—\$49.00 + \$3 s/h
Optional serial port adapter—\$7.00

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(714)545-1765
CompuServe 70346,1267
MCI Mail box 200-3496

Xfer, there are extended *Copy All* and *Xfer All* functions. These commands lend themselves to full-disk backup and restore. Other commands include *Log*, *Kill*, *Rename*, *Setup*, *Dos*, *Quit*, *Index*, *Version*, *Serial#*, and *MicroMime*.

Log allows you to "log" new disks in a PDD or to change directories on your PC. *Kill* is the delete command—it deletes files

Homestake gold mine in Lake County, California is concerned about the effect of their mining operations on Townsend's long eared bat, an endangered species. Researchers Dixie Pierson, Bill Rainey and Dolores Kuntz use OWLs to monitor traffic of the tiny bats in and out of historical abandoned mine shafts & caves. Mine supervisors now know exactly where the bats are. They can plan long in advance to avoid nest sites or to provide perfectly suitable alternative sites when mine operations threaten existing ones.

The OWL counts bats with a pyroelectric motion detector, custom designed by eme systems, similar to the infrared body-heat detectors used in burglar alarms. The sensors are positioned looking across the mine entrance. The OWL also records temperatures and light levels in different parts of the cave favored by bats. The OWL logs data every ten minutes all night, and hourly in the daytime, using compressed format and an extRAM memory expansion. This is a remote site, so everything is solar powered. The OWL and the model T go to sleep for 2 minutes between each reading to conserve power. The researchers upload the data to disk and then to EXCEL on the Mac for analysis. The record shows when the bats first return from hibernation, when the young are born and when the colony breaks up for the winter, as well as variations due to weather. It also catches the daytime activity of a swallow nesting inside the mine entrance!

Other bat news: One of the largest known colonies of the long-eared bat is located in the attic of a farmhouse located at Point Reyes National Seashore. It too is under constant OWLish surveillance. It was at Pt. Reyes we first tested the pyroelectric detectors, inside a haunted house, at night of course. While bats flew around, one of us counted blips on an oscilloscope screen and watched the OWL, and the others counted bats with night vision scopes!

Buerg's *LIST* utility for DOS. Rather than scrolling the file by, requiring you to try to stop the screen with a *Control-S* (try that on a 386 if you want to test your reflexes), PC-PDD displays your file a screen page at a time, allowing you to use your PC *PgUp* and *PgDn* keys to scroll through a file. It also accepts a large number of *WordStar*-oriented control-key sequences. As a bonus, *Control-H* will toggle your display screen to a split hex/ ASCII display. Ya gotta like a program that will let you view your files in hexadecimal!

The *Edit* command is an unexpected treat. Included in PC-PDD is a fully-functional DOS text editor. It is an excellent ASCII editor modelled on *WordStar* non-document mode, replete with control-character sequences. It will reformat paragraphs and provides wordwrap. Control characters are displayed in bold-face, and the editor will search and replace all text, including control characters.

One caution is in order, though. Do not use the *Edit* command to touch up a file that is destined for a DOS word processor. It will insert unbidden and unwanted CR's into your file, breaking up the one-paragraph-per-line format that preserves your laptop paragraphs for your word processor.

from either the PDD or DOS directory. *Rename* allows files to be renamed on DOS or PDD-2 drives. *Setup* records changes to the PC-PDD system defaults. *Dos* invokes a DOS shell—allowing access to the DOS command line. *Quit* ends a PC-PDD session.

Index is a useful feature that allows you to create PC-based catalog files of your PDD disks.

Version displays the version number of PC-PDD, while *Serial#* displays the registered serial number. The *MicroMime* command displays a mailing address and telephone number for MicroMime. Curiously, it does not list any email addresses.

COMMAND-LINE SWITCHES

PC-PDD offers a useful range of command-line switches for invoking program options. The display-type switches, *-C -L -B -M*, for color, LCD, B&W, and monochrome, let you adjust PC-PDD to different displays. The PDD-type switches, *-1 -2 -W*, for PDD-1, PDD-2, and the WP-2 variant of PDD-2, allow you to switch types of portable disk drives and disk formats. These switches are essential for anyone who works with two or three different disk formats for their laptops.

The COM-port switch, *-Pn*, where *n*

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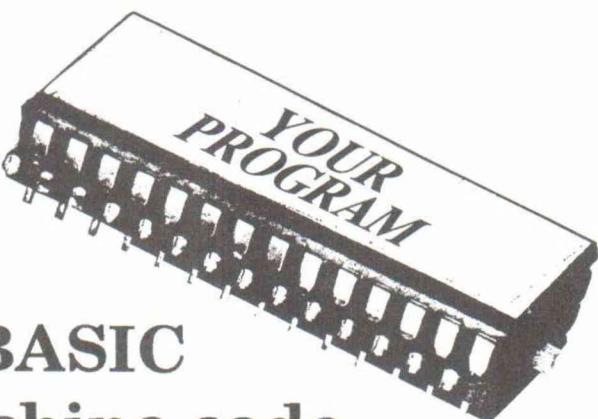
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represents serial port 1 through 4, allows you to use any available communications port on your PC. The BAUD-rate switch, -Bn, is defaulted to 19,200 bits per second. For PDD-1's only, n can be set to 9600.

Finally, the PC-Newline switch, -CRLF, -CR, and -NONE, can be invoked to change the preferred PC line endings of text files. There are a few odd-ball word processors for PC's that prefer CR-only files, and there are a few printers (mostly older Tandy units) that work best with CR-only files. The default CRLF is the best match for most word processors and printers.

Most of these settings can be made permanent by setting your choices during the installation procedure, or changing them later with the *Setup* command. Still, it is handy to have them available as command-line options—particularly the drive/disk options.

PC-PDD is a
rewarding product
for the Model T
and WP-2 worlds.

SUMMARY

PC-PDD is a rewarding new product for the Model T/WP-2 world. It provides a good fit for anyone who transfers files from Tandy laptops to *MS-DOS* computers. It is nicely designed, with intuitive features that make it easy to use.

No product is perfect, however, and *PC-PDD* has a few minor inconveniences. The most noticeable is transfer speed. While *PC-PDD* works fine for transfers, it is not a speed demon. Benchmarked against *LapDOS*, *PC-PDD* is several magnitudes slower. One hopes that future releases will infuse the program with a little digital caffeine.

Another niggling problem is that *PC-PDD* has to be invoked with the right drive type before it can connect. If you are working with two or three different formats, this is easy to forget. Perhaps a future release can be redesigned to prompt for the drive type after the program has been invoked.

The final area in which *PC-PDD* could use additional development is in translators. Except for a little ASCII grooming, there currently are none. There is noth-

Continued on page 44.

The Portable 100 Classifieds

SOFTWARE

FAST (tm) 3x turbo cassette LOAD/SAVE utility for Tandy M100/102, M200 (specify). See 11/89 P100 review. SASE for information. Cassette, manual \$19.95 ppd. Zwillenberg, 475 Richmond, Maplewood, NJ 07040.

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Data Acquisition with M100/102. REI, RR1 Box 113F, Royalton, VT 05068. (802)763-8367. 10/91

Tandy 102 w/32K, adapter, & null modem. Rarely used. \$225.00 (409) 935-5637 5/91

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Hobby contact wanted with Tandy notebook users in Paris and suburbs. Possible program exchange. Speak English, French, and Model 100 assembly language. Call 45-03-12-16 Paris phone, or write Mike Kelton, 39 Avenue Paul Doumer, 75116 Paris, France. 4/91

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Continued from page 42.

ing parallel to the outline translators in *LapDOS* or the word-processing translators in *WP2DOS Plus*. A few well-chosen translators would add a significant dimension to the product.

Quibbles aside, *PC-PDD* is a likeable product that offers solid utility for Tandy 100, 200, and WP-2 owners who have PDD's. It comes with a very good user's guide that contains information about using the product and troubleshooting any difficulties.

It is encouraging to see new products for Tandy laptops, and for an initial release, *PC-PDD* gets high marks. If it continues to evolve, it could challenge *LapDOS* as the transfer utility of choice. For WP-2 owners, it is the only DOS utility on the market that reads and writes WP-2 PDD files. Its excellent file viewer and text editor have already set new standards for laptop-to-PC transfer utilities.

You can communicate with Gene via CompuServe (his ID is 72435,732), through regular mail via the Portable 100 magazine address, or direct: 91 Inglewood Drive, Mississauga, Ontario, Canada L5G 1X9. Please add sufficient postage if you mail to Canada.



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Write ROM — the definitive word processor for the Model 100. Function key formatting or dot commands. Search and replace. Library feature — inserts words, phrases or whole documents into text from just a code. MAP lets you see a picture of your document. In all there are 60 features and functions. No one can claim faster operation. FORM lets you create interactive forms with on-screen prompts that you can answer from the keyboard. Nothing else for the Model 100 compares with the features of Write ROM. Exactly the same as the Write ROM sold as a single program. Infoworld says it "makes the Model 100 a viable writing unit ... sur-

passed our highest expectations for quality and clarity."

Lucid Spreadsheet: This is the one PICO magazine says "blows Multiplan right out of the socket" and Infoworld performance rated as "excellent" and said "makes the Model 100 compute." Gives you features you cannot get with Lotus 123. Lets you build spreadsheets in your Model 100 that would consume 140-150K on a desktop. Program generating capability with no programming knowledge required. Variable column widths. Includes find and sort with function key control. It's fast, recalculates like lightning. No feature has been taken from the original, only new ones added.

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